A

SYSTEMATIC ARRANGEMENT

OF

BRITISH PLANTS.

IN FOUR VOLUMES.

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A

SYSTEMATIC ARRANGEMENT

OF

BRITISH PLANTS;

WITH AN EASY

INTRODUCTION TO THE STUDY OF BOTANY.

ILLUSTRATED BY COPPER-PLATES.

BY WILLIAM WITHERING, M.D. F.R.S.

Member of the Royal Academy of Sciences at Lisbon; Fellow of the Linnean Society; Honorary Member of the Royal Medical Society at Ediuburgh, &c.

THE FOURTH EDITION, IN FOUR VOLUMES:

CORRECTED AND ENLARGED

BY WILLIAM WITHERING, ESQ.

Of the College of Glasgow and University of Edinburgh; Extraordinary Member of the Royal Medical Society; Fellow of the Linnean Society, &c.

"Primus gradus sapientiæ est res ipsas nosse." LINN.

"Increscunt quotannis Scientiæ, emendantur quotidie, et ad fastigium suum optatum sensim sensimque, plurium virorum opera et studio junctis, feliciter properant." THUNBERG.

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MISSOURI BOTANICAL
GARDEN LIBRARY

CLASS XII.

ICOSANDRIA.

MONOGYNIA.

PRU'NUS. *Cal.* beneath, 5-cleft: *Bloss.* 5 petals: *Drupa* with an entire nut.

[Cratægus.]

DIGYNIA.

CRATÆ'GUS. *Cal.* superior, 5 cleft: *Bloss.* 5 petals: *Berry* with 2 seeds.

[Prunus insitia.]

TRIGYNIA.

SOR'BUS. *Cal.* superior, 5-cleft: *Bloss.* 5 petals: *Berry* with 3 seeds.

PENTAGYNIA.

MES'PILUS. *Cal.* superior, 5-cleft: *Bloss.* 5 petals: *Berry* with 5 seeds.

PY'RUS. *Cal.* superior, 5-cleft: *Bloss.* 5 petals: Fruit a *Pomum*, with 5 cells and many seeds.

SPIRÆ'A. *Cal.* beneath, 5-cleft: *Bloss.* 5 petals: *Capsules* many, crowded together.

POLYGYNIA.

RO'SA. *Cal.* 5-cleft: *Bloss.* 5 petals: *Cup* like a berry, with many seeds.

RU'BUS. *Cal.* 5-cleft: *Bloss.* 5 petals: *Berry* compound.

TORMENTIL'LA. *Cal.* 8-cleft: *Bloss.* 4 petals: *Seeds* 8, awnless.

DRY'AS. *Cal.* 5 to 10-cleft: *Bloss.* 5 to 8 petals: *Seeds* many with woolly awns.

FRAGA'RIA. *Cal.* 10-cleft: *Bloss.* 5 petals: *Seeds* many, deciduous, situated upon a receptacle resembling a berry.

POTENTIL'LA. *Cal.* 10-cleft: *Bloss.* 5 petals: *Seeds* many, awnless.

GE'UM. *Cal.* 10-cleft: *Bloss.* 5 petals: *Seeds* many, with a knee-jointed awn.

CO'MARUM. *Cal.* 10-cleft: *Bloss.* 5 petals: *Seeds* many, permanent, upon a fleshy receptacle.

[Spiræa, Sempervivum tectorum.]

MONOGYNIA.

PRU'NUS. *Calyx* 5-cleft; beneath: *petals* 5: *drupa* 1-celled, closed at the top: *nut* with projecting seams.

Pa'dus. P. Flowers in bunches: leaves deciduous, with 2 glands at the base on the under side.

Fl. dan. 205–*Ger.* 1322. 9–*Dod.* 777. 1–*Ger. em.* 1504. 9–*J. B.* i. *a.* 228–*Lob. obs.* 593. 2–*Park.* 1517. 3.

Bunches from below the leaves. *Petals* serrated, not nicked as in P. *Cerasus*. LINN. *Cal.* finely serrated; within at the bottom beset with numerous woolly hairs. *Petals* finely serrated. *Stam.* 25.

Bird's Cherry. Wild Cluster Cherry. Woods and hedges in the northern counties. In a lane between Temple Mills and Epping Forest. [About Ingleborough, Yorkshire. CURT.—Woods in Norfolk, common. Mr. WOODW.—Hedges at Pendeford, Stafford. Mr. PITT.—Woods by the Tees. Mr. ROBSON.—A few miles North of Manchester, very common in woods and hedges. Mr. CALEY.] S. May.*

* It grows well in woods, groves, or fields, but not in a moist soil. It bears lopping, and suffers the grass to grow under it. The fruit is nauseous: but bruised, and infused in wine or brandy, it gives it an agreeable flavour. A strong decoction of the bark is used by the Finlanders to cure venereal complaints; which practice is corroborated by the testimony

P. Umbels mostly on short fruit-stalks: leaves egg-spear-shaped, smooth, doubled together. Ce′rasus.

E. bot. 706–*Sheldr.* 54. 1 *and* 6–*Hunt. evel.* 188. 1. *p.* 181. *ed.* ii.–*Blackw.* 449–*Matth.* 233, *and* 235–*Dod.* 808. 1–*Ger.* 1502. 1–*Ger.* 1319. 1–*Fuchs.* 425–*J. B.* i. *a.* 220–*Trag.* 1026–*Lonic.* i. 13. 2.

Leaf-scales toothed. *Floral-leaves* 3-cleft, serrated; the intermediate one leafy. The terminating *buds* producing leaves, the lateral ones flowers, which are from the last year's shoots. *Blossoms* white. *Fruit* red. Linn.

Common Wild Cherry-tree. Woods and hedges not uncommon; but probably from the stones of the garden varieties dropped by birds. Ray.—[In Hertfordshire, growing to a large size. Mr. Woodward.] T. May.*

P. Umbels sitting: leaves egg-spear-shaped, downy underneath, doubled together. a′vium.

Ludw. 108–*Blackw.* 425–*Sheldr.* 54. 5–*Ger.* 1323. 11.

Leaf-stalks with 1 or 2 glands towards the end. *Umbel* sitting, 3-flowered. *Flowers* on fruit-stalks, from the shoots of the last year but one. *Involucr.* 4-leaved. Linn.

Black Cherry-tree. Mazzards. Hedges in Suffolk. Ray. [Herts. Mr. Woodw.] T. May.†

P. Fruit-stalks mostly solitary: leaves spear-egg-shaped, coiled: branches thornless. domes′tica.

mony of M. Broerland in the Stockh. trans. He directs 6 ounces of the dry, or 8 of the fresh bark, to be boiled in 8 to 4 pints of water. The dose is 4 ounces 4 times a day.—It alone cures the slighter infections, and combined with Mercury facilitates the cure of the severer states of the disease. Venel. and a decoction of the berries is sometimes given with success in the dysentery. The wood being smooth and tough is made into handles for knives and whips. Sheep, goats, and Swine eat it. Cows are not fond of it. Horses refuse it.

* It loves a sandy soil, and an elevated situation. The gum that exsudes from this tree is equal to gum arabic. Hasselquist relates, that more than 100 men, during a siege, were kept alive for near two months, without any other sustenance than a little of this gum taken into the mouth sometimes, and suffered gradually to dissolve. The common people eat the fruit either fresh or dried; and it is frequently infused in brandy for the sake of its flavour. The wood is hard and tough. It is used by the turner, and is formed into chairs, and stained to imitate mahogany. This tree is the original stock from which many of the cultivated kinds are derived. Linn.

† It grows best in a rich soil on the sides of hills, unmixed with other trees. It bears cropping, and suffers the grass to grow under it. In Hertfordshire there is a cultivated variety, called *Carrons*, which are larger, and much finer flavoured than the common sort. Mr. Woodward.

Woodv. 85–*Park.* 1512. 1–*Ger.* 1311. 1–*Matth.* 265–*Lonic.* i. 52. 1–*Fuchs.* 403–*Trag.* 1019–*Dod.* 805–*Lob. obs.* 595. 2–*Ger. em.* 1497. 1.

Leaves, when expanding from the bud, coiled. *Flowering-buds* producing no leaves. Linn. *Calyx* sometimes 6-cleft. *Style* crooked.

Prunus communis domestica. Huds.—*Plumb-tree. Common Plumb.*

Hedges, [probably from the fruit of the cultivated varieties accidentally dropped there. St.] T. April.*

insiti'tia. P. Fruit-stalks in pairs: leaves egg-shaped, slightly woolly, coiled: branches with thorns.

E. bot. 841–*(Blackw.* 305, *is a var. of P. domestica.)*

As large as P. *domestica*. *Branches* reddish brown, smooth, some of them terminating in a thorn. *Stipulæ* narrow, fringed, sharp, cloven at the base. Upper surface of the leaves smooth. *Cups* smooth. Linn. *Stipulæ* cloven down to the base. *Calyx*, its outer skin may be pulled off, adhering to the fruit-stalk, and appearing like an outer cap. *Flowers* white; larger than those of P. *domestica*. *Style* straight. *Fruit* black; but Mr. Relhan says sometimes the colour of bee-wax.

Bullace Plumb. Black Bullace Tree. Hedges. T. April.†

spino'sa. P. Fruit-stalks solitary: leaves spear-shaped, smooth: branches thorny.

Fl. dan. 926–*E. bot.* 842–*Sheldr.* 73–*Woodv.* 84–*Fuchs.* 404–*Trag.* 1016–*J. B.* i. *a.* 193–*Lonic.* i. 51–*Blackw.* 494–*Matth.* 266–*Dod.* 753. 2–*Lob. obs.* 595. 1–*Ger. em.* 1497. 5–*Park.* 1033–*Ger.* 1313. 1. 2.

Leaves spear-egg-shaped, serrated; serratures terminated by an excretory duct, the terminating one blunter and shorter. *Leaf-scales* strap-shaped, between serrated and toothed; the points of the teeth as if dead. Linn. *Styles* sometimes 2. St.

Black-thorn. Sloe-tree. Scrogs. Hedges. T. March, April.‡

* It loves a lofty exposure, and is favourable to pasturage. The varieties have probably originated from the red and white cultivated plumb, either sown by design or accident. The cultivated garden plumbs are derived from this species. The bark dyes yellow.

† The fruit is acid, but so tempered by a sweetness and roughness as not to be unpleasant, particularly after it is mellowed by the frosts. A conserve is prepared by mixing the pulp with thrice its weight of sugar. The bark of the roots and branches is considerably styptic. An infusion of the flowers, sweetened with sugar, is a mild purgative, not improper for children.

‡ This is not well adapted to grow in hedges, because it spreads its roots wide, and encroaches upon the pasturage; but it makes a good dead fence.

The

DIGYNIA.

CRATÆ'GUS. *Cal.* 5-cleft: *petals* 5: *berry* beneath, opening at the top, 1-celled, 1 or more seeded.

C. Leaves egg-shaped, cut, serrated, cottony underneath. A'ria.

Fl. dan. 302–*Crantz.* ii. 2. 2–*Mill. ill.*–*Hunt. Evel.* 181. i. *p.* 175. *ed.* 2*d*–*J. B.* i. *a.* 65–*Lob. adv.* 435. 1–*Ger. em.* 1327. 2–*Park.* 1421–*Ger.* 1146. 2.

Seeds 4, in each cell 2, like those of the pear. CRANTZ. *Styles* 2 to 4, with as many seeds. DU ROI. *Leaves* quite white underneath. *Calyx* woolly. *Petals* scolloped towards the end, and woolly at the base. *Fruit* red.

White-beam Hawthorn. White-beam Tree. Wild Pear Tree. Woods and hedges, especially in mountainous situations and calcareous soil. [Mountainous parts of Derbyshire, from the fissures of the precipices, without any appearance of soil. Mr. WOODW. Breiddin Hill, Salop. Mr. AIKIN. Wick cliffs, and on rocks in Leigh wood opposite the Hot-wells, Bristol. Mr. SWAYNE. In Eden deane. Mr. ROBSON.] T. May.*

C. Leaves heart-shaped, with 7 angles; lowermost lobes straddling. tormina'lis.

The wood is hard and tough, and is formed into teeth for rakes, and walking sticks. From some effects which I have repeatedly observed to follow the prick of the thorns, I have reason to believe there is something poisonous in them, particularly in autumn. The tender leaves dried are sometimes used as a substitute for tea, and is, I believe, the best substitute that has yet been tried. The fruit bruised and put into wine gives it a beautiful red colour, and a pleasant subacid roughness. An infusion of a handful of the flowers is a safe and easy purge. The bark powdered, in doses of 2 drams, will cure some agues. Letters written upon linen or woollen, with the juice of the fruit, will not wash out. Sheep, goats, and horses eat the leaves. The different species of Prunus furnish nourishment to the *Papilio Cratægi*, *Polychloris*, and *Betulæ*; *Phalæna quercifolia*, *quercus*, *lanestris*, *cærulocephala*, *pavonia*, *neustria*, *Oxyacanthæ*, *Citrago*, *prunaria*, and *brumata*; *Aphis padi*; *Curculio cerasi*, and *Pruni*; and *Scarabæus horticola*.

* It loves dry hills and open exposures, and flourishes either in gravel or clay. It bears lopping, and permits the grass to grow. The wood, being hard, tough, and smooth, is used for axle-trees, wheels, walking sticks, carpenters, and other tools. The fruit is eatable when mellowed by the autumnal frosts, and an ardent spirit may be distilled from it. It seldom bears a good crop of fruit 2 years together. Sheep and goats eat it. On Breiddin Hill it is very difficult of access, for Mr. Aikin observes that the goats devour every plant within their reach.—The wood affords an excellent charcoal for the makers of gunpowder. Mr. GOUGH.

Jacq. austr. 443–*Fl. dan.* 798–*Hunt. Evel.* 182. i. 176. *ed. 2d*–*E. bot.* 298–*Matth.* 263–*Clus.* i. 10. 2–*Dod.* 803. 2–*Lob. obs.* 614. 2–*Ger. em.* 1471. 2–*Ger.* 1287. 2–*Trag.* 1010–*Park.* 1420. 2–*J. B.* i. *a.* 63–*Cam. epit.* 162–*Lonic.* i. 50. 2.

Cells 2. *Seeds.* 4. CRANTZ. *Cups* woolly. *Blossoms* white. *Fruit* reddish brown.

Wild Service-tree, or *Sorb. Service Hawthorn.* Woods and hedges. [Bath Hills near Bungay. Mr. WOODW. Pendeford, Staffordshire, in hedges. Mr. PITT.] T. May.

Oxyacan'tha. C. Leaves mostly 3-cleft: segments blunt, serrated.

Jacq. austr. 292. 2–*Matth.* 163–*Blackw.* 149. 2–*J. B.* i. *b.* 49–*Fl. dan.* 634.

Var. 2. *Monogynia.* Flowers with 1 pistil; leaves, segments more acute and expanding.

Jacq. austr. 292. 1–*Fl. dan.* 1162–*Sheldr.* 21–*Barr.* 563–*Clus.* i. 121–*Lob. obs.* 614. 2–*Park.* 1025–*Walc.*–*Blackw.* 149. 1–*Trag.* 984–*Ger.* 1146. 1–*Dod.* 751. 1–*Ger. em.* 1327. 1.

Var. 3. *Trigynia.* Flowers with 3 pistils.

Hunt. Evel. 398. ii. *p.* 92. *ed. 2d.*

All the above varieties are found in our hedge rows, that with 1 pistil is the most common, and that with 3 the most rare. *Flowers* white, but in clayey soils pinky red. *Berries* mostly a coral red, but sometimes yellow, or white. *Leaves*, the segments more or less blunt or acute; the middle segment 3-cleft; the segments more or less serrated upwards, but entire at the base. *Capsules* mostly 1-seeded, but sometimes there is a 2d cell, and the rudiment of a 2d seed.

White-thorn. Haw-thorn. May. Hedges, woods, and old parks. T. May, June.*

Var. 4. GLASTONBURY THORN. Appendages at the base of the leaves kidney-shaped, toothed, very large. It does not grow within the ruins of the abbey at Glastonbury, but in a lane beyond the church-yard on the other side of the street by the side of a pit. It appears to be a very old tree. An old woman of

† Upon account of the stiffness of its branches, the sharpness of its thorns, its roots not spreading wide, and its capability of bearing the severest winters without injury, this plant is universally preferred for making hedges, whether to clip or to grow at large. The wood is tough, and is formed into axle-trees and handles for tools. The berries are the winter food of Thrush and many other birds. The different species of Cratægus afford nourishment to *Papilio Cratægi*; *Phalæna cærulocephala*, *Oxyacantha*, and *cratægata*.

90 never remembers it, otherwise than as it now appears. There is another tree of the same kind 2 or 3 miles from Glastonbury. They tell you it has no thorns, but that I found to be a mistake: it has thorns, like other Hawthorns, but which also on large trees are but few. There is a full-sized tree of this kind in the garden at Piper's Inn. It blossoms twice a-year; the winter blossoms, which are about the size of a sixpence, appear about Christmas, and sooner if the winter be severe. These produce no fruit. The berries contain only 1 seed, and there seemed to have been only 1 pistil, but it was late in the season when I examined it. I was informed that the berries, when sown, produce plants nowise differing from the common Hawthorn. Probably the tree which gave birth to the legend grew within the walls of the abbey, and may have died from age, or been destroyed at the time of the reformation.

TRIGYNIA.

SOR'BUS. *Cal.* 5-cleft: *petals* 5 : *pomum* 5-celled, open at the top, 3-seeded.

S. Leaves winged, smooth on both sides. aucupa'ria.

Mill. ill.–Hunt. Evel. 218. i. *p.* 211. *ed.* 2*d–Fl. dan.* 1034–*E. bot.* 337–*Blackw.* 173–*Matth.* 262–*Dod.* 834–*Ger. em.* 1473–*Lob. obs.* 544. 2–*J. B.* i. *a.* 62–*Ger.* 1290–*Park.* 1419. 2–*Trag.* 1009–*Crantz.* ii. 1. 4.

Leaves, rib channelled. *Leafits* 7 or 8 pair, sitting, spear-shaped, serrated, the intermediate ones the longest. *Corymbus* terminating. *Berry* round, of a pleasant red or scarlet. *Seeds* 3, 4, 5, reddish. RELHAN. *Flowers* whitish.

Quicken-tree. Mountain Ash. Roan-tree. Service. Woods and hedges in mountainous and boggy situations in Wales, Scotland, and the North of England.*

S. Leaves winged, woolly underneath. domes'tica.

Jacq. austr. 447–*E. bot.* 350–*Crantz.* ii. 2. 3–*Nash.* i. *at p.* 10. *f.* 1. 3–*Matth.* 261–*Clus.* i. 10. 3–*Dod.* 803. 1–*Lob.*

* It grows either in woods or open fields, but best on the sides of hills and in fertile soil. It will not bear lopping. Plants grow well in its shade. The wood is soft, tough, and solid. It is converted into tables, spokes for wheels, shafts, chairs, &c. The roots are formed into handles for knives, and wooden spoons. The berries dried and reduced to powder make wholesome bread; and an ardent spirit may be distilled from them, which has a fine flavour, but it is small in quantity. The berries too, infused in water, make an acid liquor somewhat like perry, which is drank by the poorer people in Wales. In Germany the fowlers use the berries to entice the Redwings and Fieldfares into nooses of hair suspended in the woods; hence its trivial name.

obs. 544. 1–*Ger. em.* 1471. 1–*Park.* 1420. 1–*Blackw.* 174; *Fuchs.* 576–*Trag.* 1012–*J. B.* i. *a.* 59.–*Lon.* i, 50. 1.

Fruit the size of a crab. Does not produce fruit till grown to a considerable age. LINN. *Cells* 5. All the seeds seldom coming to perfection. *Bloss.* white. *Fruit* brownish. CRANTZ. *Styles* always 15. vid. E. bot. where it is removed to Pyrus.

Pyrus domestica. E. bot.–*True Service*, or *Sorb.* Mountainous forests. Mountainous parts of Cornwall, and the Moorelands of Staffordshire. [In the middle of a thick wood in the forest of Wire, near Bewdley, Worcestershire, 1 mile from Mopson's Cross, between that and Dowles Brook.]

T. April.*

hy'brida. S. Leaves wing-cleft, cottony underneath.

Fl. dan. 301–*Linn. fil. fasc.* i. 6.

Linnæus considers it as a new tree, produced between the Cratægus Aria and the Sorbus Aucuparia, having the flowers and pistils of the latter, with the foliage of the former, the leaves being rather winged at the base, but confluent upwards.

Bastard Service. On mountains. [On the walls of Castle Dinas y bran, near Llangollen, Denbighsh. Mr. GRIFFITH.] T. May.

PENTAGYNIA.

MES'PILUS. *Cal.* 5-cleft : *petals* 5 : *berry* with 1, 2, or 5 cells.

german'ica. M. Thornless: leaves spear-shaped, cottony underneath: flowers solitary, sitting.

Fl. Ross. 13. 1–*Ludw.* 88–*Blackw.* 154–*Ger.* 1264. 1–*Dod.* 801. 1–*Lob. obs.* 591. 1–*Ger. em.* 1453. 1–*Matth.* 253–*Park.* 1422. 2–*J. B.* i. *a.* 69–*Trag.* 1014–*Lonic.* i. 13. 1.

Branches woolly. *Leaves* oval-spear-shaped; towards the point serrated, and somewhat woolly. *Leaf-stalks* very short, channeled. *Calyx* terminating, hairy, with a floral-leaf as long as the blossom. LINN. *Floral-leaf* strap-shaped. *Calyx* fleshy, woolly within; teeth longer than the blossom, *Stamens* unequal, 30 or more. *Summits* cloven. *Blossoms* white. *Fruit* reddish brown.

Medlar Tree. Hedges about Minehiville. T. May.†

* The fruit is mealy and austere, not much unlike the Medlar. The *Chermes Sorbi* and *Coccinella bipustulata* live upon this and S. *aucuparia*. LINN. The wood is valuable for making mathematical rulers and excisemen's gauging sticks. NASH.

† Many people are fond of the fruit when it becomes soft by keeping; it is somewhat austere, and binds the bowels.

PY'RUS. *Cal.* 5-cleft : *petals* 5 : *pomum* beneath : 5-celled, many-seeded.

P. Leaves serrated, smooth : flowers forming a corymbus. commu'nis.

Blackw. 453–*Matth.* 251–*Lob. obs.* 590. 2–*Ger. em.* 1457–*Park.* 1590. 1 *and* 2–*Dod.* 800–*Ger. em.* 1456–*Ger.* 1267 *to* 1270–*Lonic.* i. 11–*Trag.* 1045.

Bloss. white.—*Pear Tree.* Woods and hedges. T. Apr. May.*

P. Leaves serrated: flowers in a simple umbel. Ma'lus.

Fl. dan. 1101–*E. bot.* 179–*Blackw.* 178–*Ger.* 1276. 1. 2. 3. –*Ger.* 1272. 4–*Ger. em.* 1461–*Park.* 1503. 2.

Leaves more circular than those of the preceding species. *Petals* tinged with red on the outside.

Crab Tree. Wilding. Woods and hedges. T. May.†

Var. 2. *cultivated.*–*Blackw.* 141–*Mill. ill.*–*Ger.* 1273 *to* 1274–*J. B.* i. *a.* 1–*Lob. obs.* 590. 1–*Ger. em.* 1459. 1–*Park.* 1503. 1–*Dod.* 789–*Ger. em.* 1459. 2–*Lonic.* 1. 10. 1.

* It loves a fertile soil and sloping ground ; but will not thrive well in moist bottoms. It stands the severest winters, and does not destroy the grass. The wood is light, smooth, and compact ; it is used by turners, and to make joiners tools ; and for picture frames, to be stained black. The leaves afford a yellow die, and may be used to give a green to blued cloths. The fruit is austere ; but when cultivated highly grateful, as is proved by the great variety of excellent pears which the industry of mankind has raised, for they all originate from this. The juice of the fruit fermented is called Perry, large quantities of which are raised in Worcestershire and Herefordshire for that purpose. The Squash, the Oldfield, and the Barland Perrys are reckoned the best, and are little inferior to wine. Horses, cows, sheep, and goats eat the leaves, which afford nourishment to *Papilio polychloros* ; *Phalæna Populi, lubricipeda, quercifolia, pudibunda, cærulocephala, brumata, Pomonella* ; *Aphis Pyri* ; *Chermes Pyri* ; *Curculio Pyri* ; *Musca Pyrastri.* LINN.

† It flourishes better on declivities and in shady places, than in open exposures or boggy lands. Grass and even corn will grow beneath it. It is much used as a stock, on which to ingraft the better kind of apples ; because its roots are neither killed by frost nor eaten by field mice. The bark affords a yellow dye. The wood is tolerably hard ; it turns very clean, and when made into cogs for wheels obtains a polish, and wears a long time. The acid juice of the fruit is called by the country people Verjuice, and is much used in recent sprains, and in other cases, as an astringent or repellent. With a proper addition of sugar, it is probable that a very grateful liquor might be made with the juice, but little inferior to Old Hock.—Horses, cows, sheep, and goats eat it ; swine are very fond of the fruit. LINN. *Phalæna dispar, Populi, Fascelina, Chrysorrhœa, Psi, Oporana, brumata, Pomonella, Monacha* ; *Aphis Mila* ; *Scarabæus Horticola* feed upon it.

Apple Tree. Orchards, and hedge rows. T. May.*

SPIRÆ'A. *Cal.* 5-cleft: *petals* 5: *caps.* 4 or more, 2-celled, 2-valved, many-seeded.

salicifo'lia. S. Leaves spear-shaped, blunt, serrated, naked; flowers in a compound bunch.

Fl. Ross. 21–*Gmel. sib.* iii. 39–*Kniph.* 3–*Clus.* i. 84.

A Shrub about 4 feet high. Serratures of the leaves not very regular. *Flowers* rose red, paler when expanded. I am indebted to Mr. GOUGH of Kendal for the knowledge of this being a native. He says that it sometimes occurs in moist hedges in Westmoreland, in many places on the borders of Winandermere, and that it has lately been discovered by Mr. DALTON of the academy of Manchester, by the road between Pool Bridge and Colthouse, near Hawkshead, Cumberland. It is well known in our gardens by the name of Spiræa frutex. S. July.

Filipen'dula. S. Leaves interruptedly winged: leafits strap-spear-shaped, irregularly serrated, very smooth: flowers in tufts.

Fl. dan. 635–*E. bot.* 284–*Blackw.* 467–*Kniph.* 3–*Fuchs.* 562. *Trag.* 883–*Lonic.* i. 220. 2–*Ger.* 900. 1–*Matth.* 865–*Clus.* ii. 211. 2–*Dod.* 56. 1–*Lob. obs.* 420. 3–*Ger. em.* 1058. 1–*Park.* 435. 1–*Pet.* 71. 6–*H. ox.* ix. 20. *row* 1, *left hand figure.*

Caps. numerous, disposed in a circle. LINN. *Stem* herbaceous. *Leafits* mostly alternate, smooth on both sides and shining. A pair of little leafits sitting on the leaf-stalk between each pair of larger leafits. *Fruit-stalk* crooked before the flowers expand. *Petals* cream-coloured, purplish underneath, turned back. *Styles* many.

Dropwort. Meadows-sweet. Mountainous meadows and pastures, in a calcareous soil. [Swaffham Heath, Norfolk. Mr. CROWE.—Ripton, Huntingdonshire. Mr. WOODWARD.—Bredon Hill, above Overbury, Worcestersh. NASH.—Near Madresfield, Worcest. Mr. BALLARD.—St. Vincent's Rocks, Bristol. Mr. SWAYNE.—Rocky ground between Dundee and Broughty-castle. Mr. BROWN. About Stone Henge.] P. June, July.†

* The juice fermented is called Cyder, of which large quantities are made in Herefordshire, Devonshire, part of Worcestershire and Glouces-tershire, in a soil of deep clay. The stronger sorts, as the Styre Cyder, will bear exportation to the East and West Indies. The Cyder apple-trees were originally brought from Normandy, and it is supposed by many that the liquor would be now improved by a fresh importation.

† The tuberous pea-like roots, dried and reduced to powder, make a kind of bread, which, in times of scarcity, is not to be despised.—Hogs are

S. Leaves interruptedly winged: leafits egg-shaped, doubly serrated, hoary underneath: flowers in tufts. Ulma'ria.

Curt. 340–*Ludw.* 23–*Fl. dan.* 547–*Blackw.* 465–*Kniph.* 1–*Clus.* ii. 198. 1–*Dod.* 57–*Ger. em.* 1043–*Park.* 592. 1–*Pet.* 71. 8–*H. ox.* ix. 20, *row* 1. 1. *fig.* 3*d.*–*Ger.* 886–*J. B.* iii. 488. 2.

Stem angular, reddish. *Leaves* bright green above, white underneath, irregularly serrated; the terminating leafit divided into 3 segments. *Flowers* yellowish white. *Cal.* segments and petals sometimes 4. *Capsules* 5 to 8, but mostly 6, twisted spirally together.

Common Meadowsweet, Queen of the Meadows. Moist meadows, and banks of rivers. P. June, July.*

POLYGYNIA.

RO'SA. *Petals* 5: *Cal.* urn-shaped, 5-cleft, fleshy, contracted at the neck so as to form at length a coloured berry of 1 cell, opening at the top; *seeds* many, hispid, dispersed in the pulp.

(1) *Germens more or less globular.*

R. Germens and fruit-stalks smooth: stem and leaf-stalks prickly: flowers in tufts. arven'sis.

E. bot. 188–*Walc.*–*J. B.* ii. 44. 1.

Leaves simply serrated. *Fruit-stalks* beset more or less with hairs terminated by globular heads, not subdividing as in a tuft, nor rising exactly from the same point as in an umbel; sometimes solitary. *Prickles* bowed downwards. *Blossoms* white. *Styles* as soon as they have passed through the neck of the calyx, compacted into a cylinder resembling a single style, terminated by a knob composed of the summits. This circumstance will alone distinguish it from the other species. *Fruit* globular, red. ST.

White-flowered Dogs Rose. Corn Rose. Hedges and heaths. [This is the most common rose in the west of Yorkshire, and about Manchester. Have not seen it within 50 miles of Darlington. Mr. ROBSON.] S. July.

Var. 2. HUDS.—Wild Dog Rose, with only 1 flower. RAY *Syn. indic.* Between Hackney and London, and Bishop's Wood, *ib.*

are very fond of them. LINN.—When expanded and enlarged by cultivation, it is a beautiful addition to the flower garden.

* The flowers infused in boiling water, give it a fine flavour, which rises in distillation. Sheep and swine eat it. Goats are extremely fond of it. Cows and horses refuse it. *Sphinx ocellata*, and *Filipendula* feed on both species. LINN.

spinosis'sima. R. Germens and fruit-stalks smooth: stem and leaf-stalks fully set with straight prickles: leafits circular, smooth.

E. bot. 187–*Fl. dan.* 398–*Ger.* 1088–*J. B.* ii. 41. 1–*Park.* 1018. 8–*Clus.* i. 116. 1–*Dod.* 187–*Ger. em.* 1270. 3–*J. B.* ii. 40. 2.

Prickles awl-shaped, straight, horizontal, very thickly set, unequal. *Fruit-st.* with or without prickles. *Cal.* leaves entire. LINN. *Leaf-stalks* not prickly. *Leafits* very small, roundish, sitting. *Leaf-scales* small, halberd-shaped, toothed. WOODW. *Bloss.* white, or cream-coloured, sometimes red. LIGHTF. *Prickles* very unequal in size, some flat, others like needles. The R. spinosissima, and the R. pimpinellifolia of Linnæus, we are now assured, are the same plant.

Burnet Rose. Pimpernel Rose. Heaths and sandy places. [Hedges near Yarmouth, frequent. Mr. WOODWARD.—Perran Downs, Cornwall. Mr. WATT.—Hedges and ditch banks about Worcester. Dr. STOKES. Frequent in the sandy country about Bewdley.] P. June, July.

Var. 2. Blossoms red, striped with white. SIBBALD. LIGHTF. *Ciphian Rose.*

Var. 3. Fruit-stalks prickly; flowers cream-colour, changing to white.

Specimen from Lanscale Haws, Lancashire; sent by Mr. Atkinson, who informs me that it covers several acres of sand, to the exclusion of every other vegetable.*

villo'sa. R. Germens and fruit-stalks hispid: stem with scattered prickles: leaf-stalks prickly: leaves cottony.

E. bot. 583–*J. B.* ii. 38. 1–*Park. par.* 419. 7.

Stem smooth, 2 or 4 prickles near together below the knots. *Leaves* blunt. *Petals* red. LINN. *Fruit-stalks, germen, leaf-stalks,* edges of the *leaf-scales,* and serratures of the *leafits* beset with hairs of various lengths, terminated by a gland. *Leafits* 6, with an odd one, egg-spear-shaped, more or less pointed. *Petals* longer than the calyx. *Fruit* not always hispid. Mr. WOODW. *Leaves* doubly serrated. ST. *Leaves* cottony on both sides.

Apple Rose. Mountainous hedges and shady places in the northern counties. [Grass Wood, near Kilnsay, Yorkshire. CURT.

* The ripe fruit is eaten by children; it has a grateful sub-acid taste. The juice of it, diluted with water, dyes silk and muslin of a peach-colour; and with the addition of alum a deep violet; but it has very little effect on woollen or linen.

Its dwarfish growth, and the singular elegance of its little leaves, which resemble those of the upland Burnet, entitle it to a place in the flower garden.

—In the vallies of mountainous countries. In the Craven part of Yorkshire. Mr. Wood.—Near Ulswater, Cumberland. Mr. Woodward.] S. June.

Var. 2. Huds.—*Wild Briar*, or *Dog Rose, with large prickly heps.* Ray.

Petals rather larger; *leafits* broader, shorter and more pointed; and *prickles* more hooked than in the north country plant. No other observable difference. Mr. Woodw. *Stem* wrinkled, not hairy or glandular. *Leafits* egg-shaped, serrated, 1 and 2, but mostly 3 pair, cottony on both surfaces. *Fruit-stalks, floral-leaves, calyx, germens,* edges of the *leaves,* and *leaf-stalks* set thick with globular glands supported on longer, shorter, finer, or coarser hairs or bristles. *Prickles* a little hooked downwards, rather flat, not broad. The leaves when rubbed have a faint agreeable scent.

Hedges, common. Ray. Woodw.—Near London. Huds. P. June.

(2) *Germens egg-shaped.*

R. Germens and fruit-stalks prickly at the base: prickles on the stem bent back: leaves rusted underneath. rubigino'sa.

Fl. dan. 870–*Jacq. austr.* 50–*Walc.*–*Dod.* 186. 2–*Ger. em.* 1269. 1, *left hand fig.*–*Ger.* 1087. 1–*Park. par.* 419. 8.

Branches smooth, but with scattered pretty large prickles. *Leafits* generally 7, egg-shaped, pointed, scattered over underneath with purplish resinous globules. *Leaf-stalk* rough with hairs, and minute prickles, and as are the *floral-leaves,* beset with minute glands on pedicles. *Germ.* nearly globular, beset, especially at the base, with a few small prickles. *Fruit-st.* with very minute prickles. *Bloss.* red. The R. *Eglanteria* differs in growing taller, having straight prickles, and *blossoms* large, yellow, and scentless. Linn. *Leafits* doubly serrated, smooth above, except a few scattered hairs along the mid-rib, even in the newly expanded leaves, half doubled together, not so full-scented as those of the *Garden Sweet-briar. Glands* rust-coloured or red. Its habit and mode of growth the same with that of the garden sort. In the *Garden Sweet-briar* the *leaves* beset above with very short hairs, oval-egg-shaped, and not unfrequently oval; the *glands* yellowish. They seem at least varieties. St. *Fruit* black when ripe. Lightf. That of the *Garden Sweet-briar* scarlet, sometimes smooth. St. *Germen,* prickles not numerous, and chiefly on one side. *Leaves,* the rusty appearance chiefly confined to the lower leaves. The sweet scent seems to be owing to the glands.

R. *suavifolia.* Lightf.—R. *eglanteria.* Huds. Du Roi. *Sweet-briar Rose. Eglanteria.* Hedges and heaths. [Hedges, Norfolk, but not frequent. Mr. Woodward.—Between Dudley

and Tipton. In Mr. Terne's garden, Worcester, from a gravel pit near Claines Church. Dr. STOKES.] S. June, July.

cani'na. R. Germens and fruit-stalks smooth: stem and leaf-stalks prickly.

Curt. 299–*Kniph.* 7–*Fl. dan.* 555–*Blackw.* 8–*Ludw.* 70–*Walc.* 5–*Park.* 1017. 1–*J. B.* ii. 43. 2–*Trag.* 986. 2–*Ger.* 1087. 2.

Stem smooth, with 2 alternate hooked prickles between each knot. *Leaf-stalks* with hooked prickles. *Leaves* sharpish, bare of hairs on each side. *Floral-leaves* 2, opposite, fringed. *Petals* with 2 lobes, flesh-coloured. LINN. *Leafits* 2 or 3 pair, with an odd one, pointed; serratures terminated by minute purple glands. *Leaf-stalks* sheathing; edges beset with purple glands. *Prickles* broad, flat, bowed downwards. *Cal.* segments 2, furnished with long teeth on both edges, 2 without, and the 5th with teeth on one edge. *Petals* red, sometimes nearly white; 1 lobe larger than the other.

Dogs Rose. Hep Tree. Wild Briar. Hedges and woods. S. June.*

RU'BUS. *Cal.* 5-cleft: *petals* 5: *styles* from the top of the germens: *drupa* clustered, 1-celled, fixed to a conical receptacle so as to resemble a berry.

(1) *Shrub-like.*

idæ'us. R. Leaves winged, with 5 or 3 leafits: stem prickly: leaf-stalk channeled.

* A perfumed water may be distilled from the blossoms. The pulp of the berries, beat up with sugar, makes the conserve of heps of the London Dispensatory. Mixed with wine it is an acceptable treat in the north of Europe. Several birds feed upon the berries. The leaves of every species of rose, but especially of this, are recommended in the *Eph. nat. curiosor*, as a substitute for tea, giving out a fine colour, a sub-astringent taste, and a grateful smell, when dried, and infused in boiling water.

It is a difficult matter to say which are species, and which are varieties only, in this genus: Linnæus seems to think that there are no certain limits prescribed by nature.

The different species nourish the following insects: *Phalæna Salicella, Pavonia, Libatrix, Retularia*; *Tenthredo Rosæ, Cynosbati*; *Ichneumon Bedegauris*; *Cicada Rosæ*; *Aphis Rosæ*; *Scarabæus auratus*; *Musca pellucens*; and those moss-like prickly excrescences, which are frequently found upon the branches of roses, especially upon the last species, are the habitations of the *Cynips Rosæ*. This excrescence was formerly in repute as a medicine, and was kept in the shops under the name of Bedeguar. An infusion of the full blown blossoms of all the roses, especially the paler kinds, is purgative; but the petals of the red roses, gathered before they expand, and dried, are astringent.

Fl. dan. 788–*Woodv.* 138–*Clus.* i. 117–*Dod.* 743. 1–*Lob. obs.* 619. 2–*Ger. em.* 1272. 2–*J. B.* ii. 59. 2–*Lonic* i. 41. 2–*Park. par.* 559. 1–*Trag.* 973–*Ger.* 1089. 1–*Matth.* 1010.

Stems upright, or slightly bent, green, 2 feet high, biennial, producing fruit the 2d year, after which they die down, thick set with small prickles. *Leaves* serrated, cottony underneath. *Fruit-stalks* rough with hair. LINN. *Blossoms* white. *Berry* red.

Raspberry Bush, or *Bramble Bush*. *Framboise*. *Hind-berry*. *Raspis*. Woods and hedges, rocky mountains, and moist situations. [Grass Wood, near Kilnsay, Yorkshire. CURT.—Thorpe, near Norwich. Mr. CROWE.—Berkhamstead, Herts. Mr. WOODW. Woods to the west of Bishop's Aukland. Mr. HUTCHINSON.—Wood on the South side of Edgbaston pool. In wet woods, and in thickets and rough places near rivulets, common about Birmingham.] S. May, June.*

R. Leaves 3 together almost bare; lateral leaves 2-lobed: stem prickly, cylindrical: panicle few-flowered. WOODWARD. — cæ'sius.

E. bot. 826–*Dod.* 742. 2.

Stem 3 feet long, purplish, branched, with pendent shoots at the top. *Prickles* very fine, scattered, small, bowed back, interspersed between the rough points. *Leaves* green, not cottony, though often downy underneath, serrated; the middle leafit egg-shaped, the lateral ones with generally 2 lobes. LINN. *Fruit-stalks* round, downy, long, with from 1 to 3 flowers, sometimes prickly. *Fruit* composed of fewer and larger granulations from 1 to 5. WOODWARD. *Blossoms* white. *Fruit* bluish black.

Dew-berry Bush, or *Bramble*. Woods and hedges, [and balks of cornfields. Mr. WOODW.] S. June, July.

R. Leaves winged, with 3 or 5 leafits: stem and leaf-stalks prickly: panicle oblong. WOODWARD. — frutico'sus.

E. bot. 715–*Fl. dan.* 1163–*Mill. ill.*–*Schmied.* 2–*Blackw.* 45. 7–*Kniph.* 5–*Matth.* 1009–*Dod.* 742. 1–*Lob. obs.* 619. 1, *ic.* ii, 211. 2–*Ger. em.* 1272. 1–*Park.* 1013–*Fuchs.* 152–*Trag.* 970–*Ger.* 1089. 2–*J. B.* ii. 59. 1–*Lonic.* i. 41. 1.

Stem angular, very long, with runners often several times the

* The fruit is extremely grateful, as nature presents it; but, made into a sweetmeat, with sugar, or fermented with wine, the flavour is improved. It is fragrant, sub-acid, and cooling. It dissolves the tartarous concretions of the teeth, but for this purpose it is inferior to the Strawberry. The white berries are sweeter than the red, but they are generally contaminated by insects. The fresh leaves are the favourite food of kids.

height of a man in length, spreading and climbing far and wide, and sometimes striking root; *prickles* alternate, strong, bowed back. *Leaves* sharply and unequally serrated, either green on both sides, or white and cottony underneath; the middlemost leaf largest, heart-shaped, on a leaf-stalk, the rest sitting, the lowermost very small, pointing backwards. LINN. *Leaves*, the lower 5-fingered, the upper 3-fingered, and sometimes simple or with 2 or 3 lobes. *Petals* flaccid, white, or purplish. *Granulations* about 50. HALL. *Stems* always angular; *prickles* always strong and hooked. *Leafits* usually elliptical, sometimes oval-spear-shaped, serrated, dark green above, white with a close down underneath, sometimes, though rarely, only hairy, and then pale green; the middlemost on a long leaf-stalk, the next pair on short leaf-stalks, the lower on shorter leaf-stalks, and sometimes, though rarely, sitting. Mr. WOODWARD. *Prickles* broad at the base and flatted. *Fruit* black.

Var. 2. *major*. Leaves 3-fingered and 5-fingered. WOODW.

E. bot. 827–*Blackw.* 45. 1–*Park.* 1014. 2, *but the fruit on the left hand side is that of R. fruticosus.*

Stems roundish; when growing in hedges frequently stronger and larger than the *R. fruticosus*, but in ditches not larger than *R. cæsius*, and throwing out creeping runners; *prickles* smaller than those of var. 1, slightly bent, but not hooked. *Leaves* bright green above, beneath pale and slightly hairy, but never downy; the odd leafit largest, on a long leaf-stalk, and, in the 5-fingered ones the 2d pair on very short leaf-stalks, egg-spear-shaped, pointed, broad at the base, sometimes slightly heart-shaped, cut-serrated, and more deeply and irregularly jagged than in var. 1; in the 3-fingered ones the lateral leafits lobed. *Fruit-stalks* roundish. *Flowers* smaller, and later than those of var. 1, often abortive. *Fruit* with few and large granulations, and, when ripe, covered with a bloom. *Dill.* in *R. Syn.* 467, seems to have been clear that there were 2 sorts of *Great Bramble*, but he has not well ascertained their differences. This will probably prove to be a distinct species: a similar opinion has been lately expressed by Dr. SMITH, who proposes to illustrate it by the name of R. corylifolius. It is remarkable that the segments of the calyx in this plant are clasped inwards upon the fruit, whilst in the R. cæsius they are expanded. I wish it to be determined by examination, if the segments of the calyx of the fruit are not always bent inwards and clasping the fruit in this plant, always expanding in the R. cæsius, and always reflected back in R. fruticosus. WOODWARD.

R. coryfolius. E. bot.–Hedges, Norfolk, generally intermixed with *R. fruticosus*. Messrs. PITCHFORD and WOODWARD.

Var. 3. Fruit white. Bark and leaves of a pleasant green.

Hedge near Oxford. BOBART in *R. Syn.* 467. 2.
Bramble. Black-berry Bush. Bumblekites. Hedges and woods. S. June—Sept.*

(2) *Herbaceous.*

R. Leaves 3 together, naked: shoots creeping, herbaceous. saxat'ilis.
LINN. Lower-leaves sometimes 5 together. Dr. J. E. SMITH.
Fl. dan. 134–*Clus.* i. 118. 1–*Ger. em.* 1273. 4–*Ger.* 1090. 3–*Park.* 1014. 4–*J. B.* ii. 61.

Shoots thread-shaped, very long, dying down at the end of the year, rough with hairs, and often beset with weak thorns. Granulations of the *berries* distinct. LINN. *Leafits* generally 1 on a leaf-stalk, and the rest sitting, sometimes all on leaf-stalks, sometimes all sitting; cut-serrated, pale green, slightly hairy underneath. *Fruit* composed of a few large granulations, when ripe of a beautiful clear pink, and a pleasant sub-acid flavour. *Bloss.* purple or white. Mr. WOODWARD.

Stone Bramble. Amongst stones on the sides of mountains in Yorkshire, Cumberland, and Westmoreland. [Llyn y Cwn, near Snowdon. PENN. *Wales.* Woods about Settle and Ingleton, and not far from the summit of Helsfelnab, near Kendal. CURT. Helk's Wood, by Ingleton, Yorkshire. Hills opposite Matlock Bath. Mr. WOODWARD. In Dob Bottom, a deep, woody, rocky dell, opposite the Holme, near Burnley, Lancashire. Mr. WOOD.] P. June.

R. Leaves 3 together: stem without prickles, supporting a arc'ticus. single flower.
Fl. lapp. 5. 2–*Fl. dan.* 488.

About a span high. *Flower* purplish. *Berry* dark purple. nearly the size of a mulberry. LINN. P. May.
This species is said lately to have been discovered in the Highlands of Scotland.

R. Leaves simple, lobed: stem without prickles, with 1 flower: Male and female flowers on different plants. Chamæmo'rus.
E. bot. 716–*Fl. dan.* 1–*Fl. lapp.* 5. 1–*Lightf.* 13. *at p.* 266–*Park.* 1014. 7–*Ger.* 1368–*Ger. em.* 1420.

Male and female flowers on different plants, but Dr. SOLANDER discovered the roots of the 2 plants to be united under

* The berries, when ripe, are black, and do not eat amiss with wine. The green twigs are of great use in dying woollen, silk, and mohair, black. Cows and horses eat it. Sheep are not fond of it. LINN. Three horses refused it. Silk-worms will sometimes feed upon the leaves in defect of those of the mulberry. STOKES.

ground. LINN. *Stem* hardly a foot high. *Bloss.* white, or purple. *Berries* red.

Cloud-berry. Bramble. Knot-berries. Knout-berries. Peat bogs on the sides of the mountains of Yorkshire, Westmoreland, Cumberland, Lancashire, and Caernarvonshire. [Sides of the highest mountains about Settle and Ingleton. CURT. Ingleborough, Yorkshire. WOODWARD. Near Egleston. Mr. HUTCHINSON.] P. May, June.*

FRAGA'RIA. *Calyx* 10-cleft; *petals* 5: *seeds* naked, smooth, on a *receptacle* which is egg-shaped, coloured, deciduous, resembling a berry.

ves'ca. F. Leaves 3 together: runners creeping.

Blackw. 77. 1–*Ludw.* 136–*Kniph.* 8–*Sheldr.* 3. 6–*Dod.* 672. 2–*Ger. em.* 997. 1–*H. ox.* ii. 19. *row* 1. 1. *f.* 2–*Pet.* 40. 7–*Fuchs.* 853–*J. B.* ii. 395. 3–*Trag.* 500–*Lonic.* i. 215. 1.

When growing in woods the segments of the calyx cut at the point. REICH. *Wires* long, slender, smooth, often tinged with purple. *Leaf-stalks* woolly. *Leaves*, leafits 3, egg-shaped, serrated. *Fruit-stalks* with 2 or more flowers. *Bloss.* white. *Fruit* red.

Strawberry. Hedge banks, &c.

Var. 2. HUDS. Fruit harsh, rough, and prickly, greenish, with some shew of redness. Blossoms greenish. GER. *em.*

Hyde Park; Hampstead Wood. MERRET.

Var. 3. Fruit white.

Common in woods, hollow-ways, and hedge banks, particularly in marl or clayey soil. P. May, June.†

* The berries are not unpleasant, and held to be an excellent antiscorbutic. The Norwegians pack them up in wooden vessels and send them to Stockholm, where they are served up in desserts, or made into tarts. The Laplanders bury them under the snow, and thus preserve them fresh from one year to another. They bruise and eat them with the milk of the Rein Deer. In the Highlands of Scotland also they are sometimes brought to table with the dessert. The *Papilio Rubi*, *Phalæna Pavonia*, *Rubi*, *Fascelina*, and *Sambucaria*, are nourished by the different species.

† The berries, either eaten alone, or with sugar, or with milk, are universally esteemed a most delicious fruit. They are grateful, cooling, sub-acid, juicy, and have a delightful smell. Taken in large quantities they seldom disagree. They promote perspiration, impart a violet scent to the urine, and dissolve the tartarous incrustations upon the teeth. People afflicted with the gout or stone have found great relief by using them largely, and Hoffman says, he has known consumptive people cured by them. The bark of the root is astringent. Sheep and goats eat it. Cows are not fond of it. Horses and swine refuse it. The *Cicada Spumaria* (Cuckow-spit) is very frequently found upon the leaves, and the *Coccus Polonicus* upon the roots.

This has been supposed to be the common stock from which all the different sorts cultivated in gardens are derived, but one of the garden sorts with a very large berry, called the Hautboy Strawberry, the var. β of Linn. bears male and female flowers on different plants.

F. Stem prostrate, without creeping runners. ste'rilis.

Curt. 173–*Vaill.* 10. 1–*Lob. ic.* i. 698–*Ger. em.* 998–*Pet.* 40. 8–*J. B.* ii. 395–*H. ox.* ii. 19. 5.

Shoots thick, depressed, covered with spear-shaped stipulæ of the colour of rusty iron. *Leaves* growing by threes, inversely egg-shaped, serrated, flexible, hairy, white underneath. *Leaf-stalks* very hairy. *Flowering-stems* thread-shaped, with a few small leaves. *Flowers* solitary, white, on fruit-stalks. Linn. Mr. Curtis considers this plant as forming the connecting link between the Fragaria and Potentilla, having the leaves of the former, but in fructification more resembling the latter. Gmelin considers it as a Comarum, and calls it C. *fragarioides*.

Barren Strawberry. Barren pastures, heaths, and hedge banks. P. April, May.

POTENTIL'LA. *Calyx* 10-cleft: petals 5: *seeds* roundish, naked, wrinkled, fixed to a receptacle, which is small, juiceless, spongy, tubercled.

(1) *Leaves winged.*

P. Leaves winged: stem shrub-like. frutico'sa.

Dicks. h. s.–E. bot. 88–*Kniph.* 5–*Walc.*–*H. ox.* ii. 23. *row* 3. *f.* 3*d*–*R. cat. ed.* ii. *at p.* 228–*Pet.* 41. 8–*Amman.* 17 *and* 18. 1.

Whole *plant* set with fine silvery hairs. *Stems* reddish. *Leafits* strap-spear-shaped, turned back at the edges, dark green above, pale underneath. *Leaves* hardly to be called winged, consisting of 2 pairs set crosswise, rising from the same point, with a terminating one divided down to the base into 3 open segments. *Bloss.* yellow.

Shrubby Cinquefoil. On the south banks of the Tees below Thorpe, and Eggleston Abbey, and also near Greta Bridge and Mickle Force Teesdale, Yorkshire. Ray.—Mr. Robson assures me that it still grows in great abundance upon these spots. S. June.*

* The beautiful appearance of its numerous flowers has gained it admittance into gardens. Besoms are made of it. Cows, horses, goats, and sheep eat it. Swine refuse it.

Anseri'na. P. Leaves winged, serrated: stem creeping: fruit-stalks with 1 flower.

Curt. 203–*Fl. dan.* 544–*Matth.* 1016–*Dod.* 600. 1–*Lob. ic.* i. 693. 1, *obs.* 395. 1–*Ger. em.* 993–*Park.* 593–*Ger.* 841–*Pet.* 41. 11–*Fuchs.* 619–*J. B.* ii. 398. *b*–*H. ox.* ii. 20. *row* 2. 4–*Trag.* 480–*Lonic.* i. 240. 2–*Blackw.* 6.

With long creeping runners. *Leaves* silvery and white underneath; *leafits* curiously folding themselves up. *Receptacle* hairy. *Bloss.* yellow.

Silver-weed. Wild Tansey. Goose-grass. Goose Tansey. Sides of paths and roads, and in low pastures, especially where water has stood during winter. P. June, July.*

rupes'tris. P. Leaves winged, and by threes: stem upright, without creeping runners.

Jacq. austr. 114–*Clus.* ii. 107. 1–*Ger. em.* 991–*Park.* 397. 7–*Pet.* 41. 6–*J. B.* ii. 598. *d.* 2–*H. ox.* ii. 20. *row* 1. 1–*Kniph.* 11. *very luxuriant.*

Leafits 5, 7, and 9. *Blossoms* white. Gouan. Whole *plant* hairy. *Stem* forked above. *Leaves, serratures,* and *segments of the cup,* tipped with scarlet or purple.

On the sides of Craig Wreidhin, Montgomeryshire. P. July.

(2) *Leaves with finger-like divisions.*

argen'tea. P. Leafits 5 together, wedge-shaped, snipt, cottony underneath: stem upright.

E. bot. 89–*Fl. dan.* 865–*Matth.* 1020–*J. B.* ii. 398. *c.* 1–*H. ox.* ii. 19. 11.

Stems numerous, wood-like, reclining, a foot or more in length, cylindrical, downy, forked upwards. *Branches* axillary. *Leaf-stalks* of the lower leaves long, gradually shortening upwards. *Leaves* green above, white and cottony underneath; lower ones alternate, with 5 divisions; segments wedge-shaped, entire towards the base but wing-cleft towards the ends. *Floral-leaves* with 1 or 3 strap-shaped entire segments. *Cal.* downy, as long as the blossom. *Petals* small, yellow, soon shedding. Mr. Robson.

Silvery or *hoary Cinquefoil.* Meadows and pastures in a gra-

* The leaves are mildly astringent. Dried and powdered they have been given with success in agues. The usual dose is a meat spoonful of the powder every 3 hours between the fits. The roots in the winter time eat like parsneps. Swine are fond of them. Cows, horses, goats, and swine eat it. Sheep refuse it.

velly soil. [Side of the turnpike road in the parish of Holt Castle, Worcestershire. Mr. BALLARD.—On Blackheath. Mr. JONES. About Harrowgate plentiful. Mr. ROBSON.] P. June. Sept.

P. Leafits 5 together, serrated at the end; points of the serratures approaching to the margin: stem thread-like, trailing: receptacles hairy. al'ba.

Jacq. austr. 115–*Kniph.* 8–*Clus.* ii. 105. 1–*Ger. em.* 989. 10–*Park.* 396. 2–*J. B.* ii. 398. *e.* 2–*Trag.* 507–*Ger.* 839–*Fuchs.* 623–*J. B.* ii. 398. *e.* 1.

Leafits entire, except towards the end; serratures 5 to 7, slightly downy above, underneath paler and more downy, with the veins and edges white with a silky down. *Leaf-stalks* downy. *Fruit-stalks* long, slender, downy, 1-flowered. *Petals* white, inversely heart-shaped, as long as the calyx. WOODWARD.

White Cinquefoil. In Wales. P. July, Aug.

P. Leafits 5 together: stem creeping: fruit-stalks 1-flowered. rep'tans.

Fl. dan. 1164–*Kniph.* 7–*Ludw.* 116–*Curt.*–*Woodv.* 59–*Walc.*–*Lonic.* i. 216. 2–*Fuchs.* 624–*J. B.* ii. 397–*Lonic.* i. 216. 1–*Blackw.* 454–*Matth.* 1018–*Ger.* 836. 1–*Dod.* 116. 1–*Lob. ic.* 690. 1. *obs.* 393. 3–*Ger. em.* 987. 1–*Pet.* 41. 3–*Park.* 399. 1–*H. ox.* ii. 19. 7.

Stem and *fruit-stalks* cylindrical. *Leaves*, segments ending in purplish points; *leafits* sometimes 3. *Flower-scales* spear-egg-shaped, in pairs. The Tormentilla reptans has been thought a var. of this, but not to mention other differences, the Potentilla reptans has a *creeping* stem striking out roots at the joints, but the Tormentilla reptans a *trailing* stem not striking root. M. AFZELIUS.

Common Cinquefoil. Five-leaved Grass. Meadows, pastures and road-sides. P. June. Sept.*

P. Root-leaves 5 together, sharply serrated, dented at the end: stem-leaves 3 together: stem declining. ver'na.

E. bot. 37–*Kniph.* 8–*Allioni* 24. 2–*Clus.* ii. 106. 2–*Ger. em.* 988. 8–*J. B.* ii. 398. *a.* 1–*Crantz.* ii. 1. 1.

Root below clothed with broad rusty-coloured scales, but throwing out several stems from its head. *Stems* not creeping, ascending, purplish, very much branched, thread-like, scarce perceptibly sprinkled with hairs, with many flowers. *Leaf-*

* The red cortical part of the root is mildly astringent and antiseptic. A decoction of it is a good gargle for loose teeth and spongy gums.—Horses, cows, goats, and sheep eat it.

scales entire, broad, pointed, growing to the leaf-stalk. *Leaf-stalks* long, somewhat hairy. *Leafits* sitting, naked, deeply serrated towards the end, with the serratures somewhat hairy; the uppermost with shorter serratures, and, as it were, dented at the end; the lateral ones shorter, broader, and often cloven. *Floral-leaves* broader than the leaf-scales, with often 3 sitting-leafits. *Fruit-stalks* solitary, long, somewhat hairy. *Petals* yellow, nicked, with sometimes a tawny spot at the base, sometimes without. *Stam.* and *Pistils* yellow. *Plant* when grown to maturity nearly smooth. LINN. Whole *plant* beset with soft, shining, silky hairs. *Root-leaves* roundish, on long leaf-stalks; *leafits* wedge-shaped, sitting, serrated, and truly dented at the top, entire downwards, the upper one the largest. *Stems* numerous. *Stem-leaves* 3-cleft. *Leaf-scales* in pairs, spear-shaped, embracing the stem. *Fruit-stalks* terminating, and axillary, long, slender, each with 1 flower. *Fl. leaves* spear-shaped. *Cal.* segments not very unequal, half as long as the blossom. *Petals* inversely heart-shaped. WOODWARD.

Spring Cinquefoil. Rocky mountainous pastures, and barren meadows. Near Preston. Giggleswick, Yorkshire, Gloggaeth, Caernarvonshire. PENN.—Top of Craig-cailleach, near Finlarig, Breadalbane. [King's Park, Edinburgh, on the south west side of Arthur's seat. HOPE.—And Salisbury Craigs. ST.—Near Carr End Wensleydale, Yorkshire. CURT.—Canham Heath, near Bury, Suffolk. Mr. WOODW.—Braid hills and Craig Lochart, near Edinburgh. Mr. BROWN.—Wick clifts. Mr. SWAYNE.]

P. April—June.

au'rea. P. Root-leaves 5 together, serrated, pointed: stem-leaves 3 together: stem declining.

E. bot. 561–*Fl. dan.* 114–*Hall. hist. t.* 21, *right hand fig.*; *enum.* 6. 4–*Clus.* ii. 106. 3–*Ger. em.* 989. 9–*Park.* 399. 4–*J. B.* ii. 398. *a.* 2–*Pet.* 41. 4.

Petals bright yellow, with an orange-coloured blotch at the base. *Leaves* with 3 or 5 segments at the end, but not dented as in the P. *verna*.

Pastures near Kippax, 3 miles from Pontefract. RAY. [Rocks of Malghyrdy, Ben Teskerney, Ben Lawers, and Craig Cailleach. Mr. BROWN.] P. June, July, Aug.

Mr. Curtis thinks that Ray's plant is no other than the P. verna. It was inserted in the Fl. angl. as the P. opaca, but Mr. Afzelius convinced me that the plant found in our Botanic Gardens under that name is really the P. aurea. It has been suggested that this latter is only a var. of P. verna, but its habit is very different.

TORMENTIL'LA. *Cal.* 8-cleft: *petals* 4: *seeds* roundish, naked, fixed to a small juiceless receptacle.

T. officina'lis. Stem somewhat ascending: leaves sitting.

Kniph. 6–*Ludw.* 174–*Curt.* 337–*Blackw.* 445–*Fl. dan.* 589–*Woodv.* 27–*Park.* 394. 1–*Fuchs.* 260–*J. B.* ii. 398. *g.* 2–*Sheldr.* 47–*Trag.* 503–*Matth.* 947–*Dod.* 118–*Lob. obs.* 395. 2, *ic.* 696. 2–*Ger. em.* 992–*H. ox.* ii. 19. 13–*Pet.* 41. 9–*Ger.* 840.

Styles (in Lapland) generally 8, often 16, and sometimes 4. LINN. *Stems* generally declining. *Flowering branches* ascending. *Leaf-scales* in pairs, wedge-shaped, deeply divided into 3 or more lobes. Mr. WOODWARD. *Stem* trailing, and at length ascending. *Leaves* of a beautiful green, 3 together. *Root-leaves* on leaf-stalks; *leaf-stalks* shorter than the breadth of the leafits; *leafits* serrated. *Calyx*, the 4 smaller segments on the outside of the other 4. *Petals* sometimes 5, of a fine yellow, with an orange-coloured blotch at the base; claws very short. *Stamens* 14 to 18. *Pistils* 6 to 16. *Receptacle* woolly.

Several highly respectable Botanists have thought that the Potentilla and Tormentilla ought to constitute but one genus, the only difference consisting in the number of the petals and of the clefts of the calyx; but after mentioning this circumstance, I think their present disposition more favourable for investigation. Unwilling as we are to change a Linnæan name, his epithet *erecta* (upright) given to the present species, is so very erroneous, and so calculated to mislead, that we have chosen with Mr. Curtis to call it T. *officinalis*.

T. *erecta*. Sp. pl. *Potentilla sylvestris*. NECKAR. *Potentilla Tormentilla*. Bot. Arr. ed. 2. *Septfoil. Tormentil.* Moors, barren pastures, and shady places. P. June—Sept.*

T. rep'tans. Stem trailing: leaves on leaf-stalks.

Walc.–Plot. oxf. 9. 5. *at p.* 146–*Pet.* 41. 10.

All the *leaves* on leaf-stalks. *Leafits* 3 together, wedge-shaped, generally on short leaf-stalks, serrated upwards, entire at the base; the upper frequently 3-cleft. *Stipulæ* spear-shaped, entire, with 2 or 3 clefts.

When cultivated in a garden, it frequently varies with 4 and 5 petals, which probably induced Mr. Hudson to think it a var.

* The roots may rank with the strongest vegetable astringents, and as such have a place in the modern practice of physic. They are used in several countries to tan leather. Farmers find them very efficacious in the dysenteries of cattle. They dye red. Cows, goats, sheep, and swine eat it. Horses refuse it. LINN. A horse eat it.

of Potentilla reptans. If a var. of any thing, it must be of Tormentilla officinalis, but I believe it to be a distinct species. Woodward. In a garden sometimes producing 5 petals, and 10 clefts in the calyx, which confirms the opinion of those who maintain that Potentilla and Tormentilla are not distinct genera. Independent of the generic character, this species, as Mr. Afzelius remarked to me, differs from the P. reptans, in having a *trailing* stem which does not strike root at the joints, whilst that has a creeping stem which takes root at every joint.

Woods and sandy barren pastures. [About Manchester. Mr. Caley. Lakenham, near Norwich. Mr. Crowe. Berkhamstead, Herts. Mr. Woodw.] P. June, July.

GE'UM. *Cal.* 10-cleft: *petals* 5: *styles* terminating: *seed* with a jointed awn: *recept.* pillar-like.

urba'num. G. Flowers upright: fruit globular, woolly: awns hooked, bare: root-leaves lyre-shaped: stem-leaves in threes. *Ait. H. Kew.*

Ludw. 36–*Curt.* 113–*Kniph.* 9–*Blackw.* 253–*Walc.*–*Fl. dan.* 672–*Fuchs.* 384–*Woodv.* 259–*Pet.* 40. 1–*Ger.* 842. 1–*Matth.* 984–*Clus.* ii. 202. 2–*Dod.* 137. 1–*Lob. ic.* 693. 2, *obs.* 396. 2–*Ger. em.* 994. 1–*Park.* 136. 1–*H. ox.* iv. 26, *row* 2. 1 *and* 2.

Stem somewhat angular. *Leaves* winged, hairy, with 2 pair of leafits; the lower pair circular, jagged and toothed, unequal; the upper pair egg-spear-shaped, jagged and toothed; and an odd one larger than the rest, frequently cloven into 3 segments. The 1st pair Linnæus considers as stipulæ. *Petals* yellow. *Germens* hairy. *Styles* smooth, purple, with a double flexure towards the end.

Common Avens, or *Herb Bennet*. Woods and hedges. P. June—Aug.*

Var. 2. *large-flowered*. Huds.—*Fuchs.* 385–*Trag.* 37. Tedford Wood in the Welds, Lincolnshire, and in Cambridgeshire. Ray.

riva'le. D. Flowers nodding: fruit oblong: awns feathered, twisted: petals blunt, roundish wedge-shaped: leaves winged. *Ait. H. Kew.*

E. bot. 106–*Fl. dan.* 722–*Kniph.* 1–*Lob. ic.* i. 694–*Clus.* ii.

* The roots, gathered in the spring, before the stem grows up, and put into ale, give it a pleasant flavour, and prevent its going sour. Infused in wine it is a good stomachic. Its taste is mildly austere and aromatic, especially when it grows in warm dry situations; but, in shady and moist places, is has little virtue. Cows, goats, sheep, and swine eat it. Horses are not fond of it.

203. 1–*Ger. em.* 995. 4–*Pet.* 40. 3–*H. ox.* iv. 26. 7–*J. B.* ii. 398. *n.* 2.

Awns hairy. LINN. *Upper-leaves* with 3 or 4 lobes. *Leaf-scales* undivided, or jagged. *Fruit-stalks* purplish, becoming less bent when the seeds ripen. *Cal.* oblong, flat at the base, greenish purple, cloven half way down. *Bloss.* streaked, of a dilute deadish red.

Water Avens, or *Bennet.* When cultivated in a dry soil the flowers are apt to become double, or proliferous.

Var. 2. Flowers double; sometimes proliferous. Mr. ROBSON.

Moistish mountainous pastures about Settle, and Ingleton, in Yorkshire. RAY. CURT.—And about Snowdon. [Sides of rivers and mountains in the north, common. Mr. WOOD.—Near Norwich. Mr. PITCHFORD.—Marsham, near Swaffham. Mr. WOODWARD.—Water of Leith, near Edinburgh.—County of Durham, common. Mr. ROBSON.—In a meadow at Aldridge, plentiful. Mr. PITT.] P. June, July.*

G. Flowers large, yellow.—Dr. Smith conjectures this to be a hybrid between G. rivale and urbanum. Its awns are hairy as in the former, its habit, colour, and size more resembling the latter. interme'dium.

Mr. ROBSON says, "I have cultivated this Geum some years, and find no alteration with it. I saw it this spring in Mr. Curtis's garden, named G. *intermedium*, where it has been long cultivated, and Mr. Curtis agrees with me in opinion that it is a distinct species."

[Near Darlington, frequent. Mr. ROBSON.—About half a mile from Sawlow, on the road to Giggleswick, Yorksh. Mr. CALEY.—At Matlock, Dr. SMITH. E. bot.] Sept.

DRY'AS. *Cal.* 5 or 10-cleft: *petals* 5 or 8: *seeds* with tails, formed by the feathered style: *receptacle* broad and flat.

D. Petals 8: leaves simple. octopet'ala.

E. bot. 451–*Penn. hebr.* 33. *at p.* 285–*Fl. dan.* 31–*Clus.* i. 351. 2–*Ger. em.* 659. 6–*Ger.* 533. 4–*Lob. adv.* 209, *ic.* i. 495. 1–*Gisek.* iii. 66–*Lob. obs.* 260. 2, *ic.* 495. 2–*Park.* 106. 1.

* The powdered root will cure tertian agues, and is daily used for that purpose by the Canadians. Sheep and goats eat it. Cows, horses, and swine are not fond of it. LINN. It is made use of to cure ropy malt liquor ST.

Leaves very blunt, and almost nicked. *Root-leaves* egg-shaped, bent back at the edge, perennial, white underneath. *Stalk* bare, with 1 flower. *Blossoms* flat, falling off, of a snowy white. *Seeds* oblong. LINN.

Mountain Avens. High mountains. On those between Gort and Galloway, and near Sligo, in Ireland; and on those on Breadalbane, Isle of Skye, Ross-shire; Sutherland, and Argylesh. RAY, and Messrs. STUART and LIGHTF.—On Arncliff Clowder, in Littendale, near Kilnsay, Yorkshire. CURT.—Near Settle, Yorkshire. Dr. FELL.—Stonecliffe, near Littendale, in the Craven part of Yorkshire. Mr. WOOD.] P. May, June.

CO'MARUM. *Cal.* 10-cleft, permanent; segments alternately smaller: *petals* 5; *seeds* naked, smooth: *recept.* globular: fleshy, woolly, permanent.

palus'tre. C. Leaves winged: petals smaller than the calyx.

Dicks. h. s.–Kniph. 9–*Fl. dan.* 636–*E. bot.* 172–*Ger.* 836. 4–*J. B.* ii. 398. *c.* 2–*Dod.* 117. 2–*Lob. ic.* 691. 1–*Ger. em.* 987. 4.

The calyx, petals, stamens, styles and receptacles of a dark red purple, approaching to blackness.

Marsh Cinquefoil. Purple Marshlocks. Muddy putrid marshes. [Giggleswick Tarn, near Settle. CURT. Marl pits near Dalton. Mr. ATKINSON. Norfolk, not unfrequent. Mr. WOODWARD. Boggy places near Bromsgrove Lickey, Worcestershire. NASH. Bogs in the county of Durham, frequent. Mr. ROESON. South West side of Edgbaston Pool.] P. June, July.

Var. 2. Differs only in the leaves being hairy, which hairiness also it loses in the following year. LINN.*.

Pluk. 212. 2–*Pet.* 41. 2.

* The root dyes a dirty red. The Irish rub their milking pails with it, and it makes the milk appear thicker and richer. Goats eat it. Cows and sheep are not fond of it. Horses and swine refuse it.

CLASS XIII.

POLYANDRIA.

MONOGYNIA.

(1) *Petals* 4.

PAPA'VER. *Calyx* 2-leaved: *Capsule* 1-celled; crowned.

CHELIDO'NIUM. *Calyx* 2-leaved: *S. vess.* a long *Pod.*

ACTÆ'A. *Calyx* 4-leaved: *Berry* 1-celled: *Seeds* in a double row.

(2) *Petals* 5.

CIS'TUS. *Caps.* nearly globular: *Cal.* 5-leaved: 2 leafits smaller.

TIL'IA. *Caps.* 5-celled; like leather: *Seed* 1: *Cal.* deciduous.

[Delphinium Consolida.]

(3) *Petals many.*

NYMPHÆ'A. *Berry* many-celled; outer coat like bark: *Cal.* large.

DIGYNIA.

POTE'RIUM. *Flowers* M. and F. on the same plant. *Cal.* 4-leaved: *Bloss.* with 4 divisions.

F. *Berry* formed of the indurated tube of the blossom.

TRIGYNIA.

DELPHIN'IUM. *Cal.* none: *Bloss.* 5 petals; upper petal horned-shaped behind: *Nectary* cloven; sitting.

[Chelidonium hybridum. Reseda Luteola.]

TETRAGYNIA.

[Myriophyllum verticillatum.]

PENTAGYNIA.

AQUILE'GIA. *Cal.* none: *Bloss.* 5 petals: *Nectaries* 5; horned in the lower part.

[Papaver cambricum.]

HEXAGYNIA.

STRATIO'TES. *Cal.* with 3 divisions: *Bloss.* 3 petals: *Berry* 6-celled; in a sheath.

[Papaver cambricum.]

POLYGYNIA.

ZOSTE'RA. *Spike-stalk* strap-shaped; bearing fruit on one side: *Cal.* none: *Bloss.* none: *Stam.* alternate: *Seed* solitary; alternate.

CLEM'ATIS. *Cal.* none: *Bloss.* 4 petals: *Seeds* many; awned.

THALIC'TRUM. *Cal.* none: *Bloss.* 4 or 5 petals: *Seeds* many; awnless; naked.

A'RUM. *Sheath* 1 leaf; cone-shaped: *Sheath-Fruit-stalk,* naked above; bearing *Pistils* below, and *Stamens* in the middle.

HELLEB'ORUS. *Cal.* none: *Bloss.* 5 petals; permanent: *Nectaries* many: *Caps.* many seeded.

CAL'THA. *Cal.* none: *Bloss.* 5 petals: *Caps.* many: *Nectaries* none.

ANEMO'NE. *Cal.* none: *Bloss.* 6 petals: *Seeds* many.

TROL'LIUS. *Cal.* none: *Bloss.* 14 petals: *Nectaries* strap-shaped: *Caps.* many-seeded.

SAGITTA'RIA. *Flowers* M. and F. on the same plant. *Cal.* 3 leaves: *Bloss.* 3 petals,

M. *Filaments* about 24.

F. *Seeds* many; naked.

RANUN'CULUS. *Cal.* 5 (or 3) leaves: *Bloss.* 5 (or 8) petals: *Seeds* many: *Petals* with a Nectary in the claw.

ADO'NIS. *Cal.* 5 leaves: *Bloss.* 5 or 10 petals: *Seeds* many: angular; covered with a thick skin.

[Nymphæa alba. Papaver somniferum.]

MONOGYNIA.

ACTÆ'A. *Bloss.* 4 petals: *cal.* 4 leaves: *berry* 1-celled: *seeds* semi-circular.

A. Bunch egg-shaped: fruit berry-like. spica'ta.

Blackw. 565–*Fl. dan.* 498–*Clus.* ii. 86. 2–*Dod.* 402. 1–*Lob. obs.* 389. 1. *and ic.* i. 682. 1–*Ger. em.* 979–*Park.* 379. 1–*Ger.* 829–*H. ox.* i. 2. 8–*J. B.* iii. 660. 1.

Petals rhomb-shaped, flat, membranaceous. LINN. *Blossoms* white. *Berries* black.

Herb Christopher. Bane-berries. Woods and shady places. Near Malham Cove, and in a wood near Clapham, Yorkshire. [Whitfell Gill, or Arthur's Foss, near Askrig, Yorkshire. CURT. On Ingleborough. Mr. WOODWARD. And in the fissures of the very curious natural pavement of limestone at the foot of it. ST. About Thorp Arch, and in Wensley Dale, near Askrig, Yorks. Mr. WOOD.] P. May, June.*

CHELIDO'NIUM. *Bloss.* 4 petals; *cal.* 2 leaves: *pod* strap-shaped; *receptacle* of the seeds (generally) lattice-like.

C. Fruit-stalks forming umbels. ma'jus.

Ludw. 132–*Kniph.* 8–*Fl. dan.* 542–*Woodv.* 263–*Blackw.* 91–*Mill.* 92. 1–*Walc.*–*Fuchs.* 865–*J. B.* iii. 482–*Trag.* 107–*Ger.* 911–*Clus.* ii. 203. 1–*Dod.* 48–*Lob. obs.* 440. 1, *and ic.* i. 760. 2–*Ger. em.* 1069. 1–*Park.* 617. 1–*Lonic.* i. 165. 3–*Matth.* 628–*H. ox.* iii. 2. *row* 1. 2.

Leaves winged; segments, nearly circular, scolloped. *Flowers* yellow. *Stamens* sometimes not more than 20. *Seed-vessel* cylindrical, but compressed.

Greater or Common Celandine. [Hedges, rough shady places, on rubbish and uncultivated ground.] P. May—July.

Var. 2. Jagged-leaved.

Kniph. 8, *first fig.*–*Fl. dan.* 676–*Mill.* 92. 2–*J. B.* iii. 483 –*Clus.* ii. 203–*Ger. em.* 1069. 2–*Park.* 617. 2.

* The plant is a powerful repellent. The root is useful in some nervous cases, but it must be administered with caution. The berries are poisonous in a very high degree. It is said that toads, allured by the fœtid smell of this plant, resort to it; but it grows in shady places, and toads are fond of damp and shady situations. Sheep and goats eat it; cows, horses, and swine refuse it.

C. *laciniatum.* *Leaves* with 5 lobes. *Lobes* narrow, sharply jagged. MILL. who, during the cultivation of it for upwards of 30 years, could never perceive any alteration in it. ST.

Among the ruins of the Duke of Leeds's seat at Wimbledon.*

Glau'cium. C. Fruit-stalks with 1 flower: leaves embracing the stem, indented: stem smooth.

Fl. dan. 585–*E. bot.* 8–*Fuchs.* 520–*J. B.* iii. 398–*Kniph.* 4–*Trag.* 123–*Clus.* ii. 91. 1–*Dod.* 448–*Lob. obs.* 141. 1. *and ic.* i. 270. 2–*Ger. em.* 367. 1–*Ger.* 294. 1–*Pet.* 52. 7–*Matth.* 1061–*Lonic.* i. 82–*H. ox.* iii. 14. 1. *f.* 1–*Park.* 262. 1 *and* 2.

Plant sea-green. *Leaves* roughish; *root-leaves* with winged clefts; those of the stem only lobed. *Bloss.* yellow. *Pods* rough, separated by a partition into cells. LINN. *Stem* much branched. *Stem-leaves* embracing the stem, deeply indented, rough above, smooth beneath. *Branches* forked. *Fruit-stalks* thick, slightly hairy, with 1 or 2 flowers. *Cal.* large, oval, hairy. *Petals* large, egg-shaped, yellow. *Pods* very long, bent in various direction, terminated by an arrow-shaped summit. WOODW. *Pods* often 10 or 12 inches long.—It is remarkable that a high wind does not affect the petals, and yet it is difficult to pluck the flowers without some of them falling off. Mr. ATKINSON.

Yellow-horned Poppy. Sea Celandine. Sandy sea shores. [Norfolk and Suffolk coast, particularly about Dunwich; and Cartmel Sands and Roosebeck, Lancashire. Mr. WOODWARD. Isle of Wight. ST. Walney Isle. Mr. ATKINSON. Sea coast, Teignmouth.] A. July, August.

cornicula'tum. C. Fruit-stalks with 1 flower: leaves sitting, wing-cleft: stem rough with hairs.

Curt. Glaucium–Clus. ii. 91. 2–*Dod.* 449. 1–*Lob. obs.* 141. 2 *and ic.* i. 271. 1–*Ger. em.* 367. 2–*Ger.* 294. 2–*J. B.* iii. 399. 1.

Plant sea-green. *Root* spindle-shaped. *Root-leaves* in a circle, on short leaf-stalks; wings alternate, indented at the ends, the upper ones largest, the terminating ones broad, blunt, with 3 or 4 indentures, hairy. *Stem* slightly hairy, furrowed,

* The juice of every part of this plant is yellow and very acrimonious. It cures tetters and ringworms. Diluted with milk it consumes white opake spots upon the eyes. It destroys warts and cures the itch. There is no doubt but a medicine of such activity will one day be converted to more important purposes.

forked, branched. *Stem-leaves* half embracing the stem, alternate. *Fruit-stalks* terminating, and from the bosom of the upper leaves, slightly hairy, with sometimes 1 or 2 leaves, similar to those of the stem but smaller. *Petals* oval, deep orange, veined, with an elliptical purplish spot at the base of each. *Caps.* very long, nearly straight, terminated by a blunt knob, very hairy. WOODWARD.

Red Celandine. Sandy corn fields, Norfolk, discovered by Mr. Stillingfleet. A. July, August.

C. Fruit-stalks with 1 flower: leaves wing-cleft: segments strap-shaped: stem smooth; pod with 3 valves. hybridum.

E. bot. 201–*Kniph.* 10–*Clus.* ii. 92. 2–*Dod.* 449. 2–*Lob.* 141. 3. *and ic.* 272. 1–*Ger. em.* 367. 4–*Park.* 262. 3–*J. B.* iii. 399. 2–*Pet.* 52. 8–*H. ox.* iii. 14. 2. *f.* 2.

Summits 3. *Pods* with 3 furrows. Was it not originally produced by the pollen of a species of *Chelidonium* impregnating the germen of *Papaver Argemone?* LINN. *Leaves* very much like those of *Papaver hybridum.* *Caps.* 2 inches long, somewhat crooked, rough with a few hairs. *Summit* with 3 rays. LYONS. *Root* spindle-shaped, slender. *Root-leaves* on leaf-stalks. *Stem-leaves* sitting, simply or doubly winged; divisions strap-shaped, nearly equal, smooth. *Stem* slightly hairy. *Fruit-stalks* smooth. *Calyx* oval, slightly hairy. *Petals* egg-shaped, deep purple. *Pods* long, smooth, terminated with a roundish knob. WOODWARD.

Papaver caule ramoso, &c. Hort. ups. 136. *n.* 2. *γ.* ST. *Violet Celandine.* Sandy cornfields. Between Swaffham and Burwell, Cambridgeshire. RAY. RELHAN. A. May, June.

PAPA'VER. *Bloss.* 4 petals: *cal.* 2 leaves: *summit* target-shaped, radiated, scolloped; *caps.* (often) many celled, opening with holes underneath the permanent summit.

P. Capsule nearly globular, knobby, bristly: stem leafy, many-flowered. hybridum.

E. bot. 43–*Lob. obs.* 144. 1. *and ic.* i. 276. 1–*Ger. em.* 373. 1–*Park.* 369. 1–*J. B.* iii. 396. 1–*Pet.* 52. 5–*H. ox.* iii. 14. 9–*Ger.* 300. 1.

Caps. with 6 furrows like a melon. *Summit* 6-cornered. LINN. Furrows from 6 to 10. *Summit,* rays as many. Mr. ROBSON. *Leaves* doubly wing-cleft; *segments* strap-shaped, nearly equal, the terminating one 3-cleft; nearly smooth above,

nerves underneath with strong hairs pointing upwards. *Branches* and *fruit-stalks* channelled, with strong hairs pointing upwards. *Capsules* roundish-oval. Woodw. *Petals* small, dark dirty scarlet. *Filaments* deep purple. *Anthers* pleasant blue. Relhan.

Round rough-headed Poppy. Corn fields. [Near Norwich. Mr. Pitchford. At Wells, Norf. Mr. Crowe. About Durham. Mr. Robson.] A. June, July.

Argemo'ne. P. Caps. club-shaped, bristly: stem leafy, many-flowered.

E. bot. 643–*Fl. dan.* 867–*Curt.* 313–*J. B.* iii. 396. 2–*Lob. obs.* 144. 2. *and ic.* i. 276. 2–*Ger. em.* 373. 2–*H. ox.* iii. 14. 10–*Pet.* 52. 6–*Ger.* 300. 2.

Leaves with 3 divisions, wing-cleft. *Fruit-stalks* rough. *Calyx* hairy. Linn. *Leaves* winged; *wings* opposite, decurrent, spear-shaped, deeply wing-cleft, terminating one 3-cleft; nearly smooth above, nerves and leaf-stalks rough underneath with diverging hairs. *Stems* and *fruit-stalks* with hairs pointing upwards. *Petals* wedge-shaped, narrow. *Caps.* elliptical, ribbed, set with strong hairs. Woodw. *Root-leaves* with a broad midrib, set with 3 or 4 pair of wings, and an odd one, each of which is cloven into 3. *Petals* inversely egg-shaped, scarlet, with a black spot towards the base, white before the calyx opens. *Germen* inversely conical. *Summit*, rays 5 to 8. *Caps.* cells as many as rays on the summit; bristles strong, white, pointing upwards.

Rough-podded Poppy. Cornfields. A. June, July.

maritimum. P. Capsules nearly cylindrical, bristly: stem supporting a single flower.

Whole *plant* set with bristly hairs laid flat. *Stem-leaves* 2, sitting, wing-cleft. *Root-leaves* wing-cleft; *leaf-stalks* longer than the leaves. *Petals* wedge-shaped, scarlet, black at the base. Sent to me by Mr. Atkinson, from Roosebeck, where it grows in great abundance in a sandy soil, and hath, he says, invariably only 1 flower upon a plant. I collected similar specimens by the sea side at Weymouth in May. All the plants I have seen are only about 4 inches high. If when cultivated in a good soil it still continues to bear only a single flower, there can be no doubt of it being a distinct species. In reply to my further enquiries, Mr. Atkinson says, "The Poppy with 1 flower upon a plant I have seen growing in gardens near the coast very luxuriantly, with this difference only, that the leaves are not quite so rough as when growing upon the sand banks."

A. June, July.

Rhæ'as. P. Capsules smooth, urn-shaped: stem hairy, many-flowered: leaves wing-cleft, jagged.

Curt. 215–*E. bot.* 645–*Blackw.* 560–*Ludw.* 17–*Kniph.* 5, *the 2d fig.*–*Woodv.* 186–*Fuchs.* 516–*Trag.* 126–*Ger.* 299. 1–*Lonic.* i. 81–*H. ox.* iii. 14. 6–*Dod.* 447–*Lob. obs.* 143. *and ic.* i. 275–*Ger. em.* 371. 1–*Park.* 366. 4–*Pet.* 52. 2–*Matth.* 1057–*Blackw.* 2.

Stem, hairs expanding. LINN. *Leaves* hairy: *leafits* strap-shaped, indented, serrated. *Fruit-stalks* long; hairs expanding. LYONS. *Stem* cylindrical, branched. *Capsule* not globular but urn-shaped, and nearly as broad as it is long. *Summit* with 10 or 12 rays. *Bloss.* bright full scarlet.

Corn, or *Red Poppy*. *Corn Rose*. *Cop-rose*. *Head-wark*. Among corn. A. June—August.*

A variety frequently occurs with an oval shining black spot at the base of each petal, 4 lines long and 3 wide. From this originate many beautiful varieties frequent in gardens. WOODW.

P. Capsules oblong, smooth: stem many-flowered: fruit-stalks with bristles laid to: leaves wing-cleft, snipt. *dubium.*

E. bot. 614–*Curt.* 297–*Walc.*–*H. ox.* iii. 14. 11–*Pet.* 52. 3.

Stem woolly below, more and more bristly upwards, the bristles on the fruit-stalks laid close. *Leaves*, segments entire, edges and mid-ribs hairy. *Capsules* conical, much longer than broad; rays of the summit from 6 to 10. *Petals* dilute scarlet. A strict attention to the proportionate length and breadth of the capsule, and to the hairs on the fruitstalk being laid close or expanding, will always distinguish this species from the *P. rhæas*.

Smooth-podded, or *long smooth-headed Poppy*. Cornfields, chiefly in light sandy land. A. June, July.

Var. 2. *shaggy*. Whole plant very hairy: segments of the leaves snipt.

Fl. dan. 902.

This seems to be an intermediate plant between the P. *rhæas* and the P. *dubium*, if it be not a distinct species. The bristles on the fruit-stalks are laid close as in the latter, but the segments of the leaves are very much snipt at the edges. The calyx is studded with large transparent globules, with a taper bristle springing out of each. The capsule is nearly twice as long as it is broad, so that it is longer than in the P. *rhæas*, but shorter than in the P. *dubium*.

[About Shanklin Cline, and in pastures in various parts of the Isle of Wight.] A. June.

* The petals give out a fine colour when infused, and a syrup prepared from the infusion is kept in the shops. It partakes in a small degree of the properties of opium.

somni'ferum. P. Calyx and capsules smooth: leaves embracing the stem, jagged.

Blackw. 482 β 483–*Woodv.* 185–*Dod.* 445. 2–*Lob. obs.* 142. 1. *and ic.* i. 272. 2–*Ger. em.* 369. 1–*Park.* 366. 2–*Fuchs.* 518–*Dod.* 445. 1–*Lob. obs.* 464. 1. *and ic.* i. 274. 1–*Ger. em.* 369. 2 ε–*Park.* 365. 1–*J. B.* 390–*Matth.* 1058–*Ger.* 296. 1–*Ger.* 296. 2 ε–*Trag.* 122–*Lob. obs.* 464. 1. *and ic.* i. 274. 2–*Ger. em.* 370.

Stem, leaves, calyx, and *capsule* smooth. *Summits* 10. Linn. *Petals* white, tinged with purple, with large deep purple blotches at the base. Ray.

Wild or White Poppy. Uncultivated neglected gardens. Ray. Cornfields. Huds. Water beach, and banks of the closes which separate Denny Farm from the Ely road. Relhan.

A. June, July.*

cam'bricum. P. Capsules smooth, oblong: stem many-flowered, smooth: leaves winged, jagged.

Dill. elth. 223. 290–*E. bot.* 66–*Park.* 369. 4–*H. ox.* iii. 14. 12–*Pet.* 52. 4.

Summits 5 or 6, distinct. *Capsules* oblong, narrower below, with a kind of beak at the end. Linn. *Leaves* winged, nearly smooth; *root-leaves* on very long hairy leaf-stalks; wings 2 or 3 pair, oval-spear-shaped, deeply cut, almost lobed, the terminating one with 3 lobes; *stem-leaves* on short fruit-stalks, the upper sitting. *Fruit-stalks* slightly hairy, with 1 flower. *Petals* egg-shaped, pale yellow, scored towards the base. Woodw.

Yellow Poppy. Mountains of Wales, and about Kendal. [By the Ferryhouse on Winander Mere, Westmoreland, and near Holker, Lancashire. Mr. Woodward.] P. June—August.

NYMPHÆ'A. *Bloss.* many petals: *cal.* 4 or 5 leaves: *summit* round, flat, sitting: *berry* superior, lopped, many-celled.

lute'a. N. Leaves heart-shaped, very entire: calyx 5-leaved, much larger than the petals.

* Opium is the milky juice of this plant, inspissated by the heat of the sun. The Edinburgh College directs an extract to be prepared from the heads, *i. e.* the seed-vessels. This extract is supposed to be milder in its effects than the foreign Opium, agreeing with many constitutions by which that cannot be borne, but it requires double the quantity for a dose. A syrup, made with a decoction of the heads, is kept in the shops, under the name of Diacodion. The seeds are sometimes used to make emulsions, but they have nothing of the narcotic virtues of the other parts of the plant.

Fl. dan. 603–*Blackw.* 497. *a and b, and* 499. 1–*E. bot.* 159–*Lonic.* i. 177. 2–*Kniph.* 3–*Fuchs.* 536–*Trag.* 697–*J. B.* iii. 771–*Matth.* 894–*Clus.* ii. 77. 2–*Dod.* 585. 2–*Lob. obs.* 324. 2. *and ic.* i. 594. 2–*Ger. em.* 819. 2–*Park.* 1252. 5–*Pet.* 71. 3–*Ger.* 672. 2.

Calyx, leaves roundish. *Petals* very small. LINN. *Leaves* egg-shaped, with a deep notch at the base. *Calyx,* leaves yellow, except at the base on the outside, where they are green. *Petals* fleshy, yellow. *Stamens* after shedding their pollen bent back. *Seed-vessel,* cells often more than 15. *Flowers* on long fruit-stalks.

Yellow Water Lily, or *Watercan.* Slow rivers, pools, and ditches. [River Avon, at Pershore, Worcestersh. Mr. BALLARD. Mr. WALDRON HILL.] P. July, August.*

N. Leaves heart-shaped, very entire: calyx 4-cleft. alba.

Fl. dan. 602–*Blackw.* 498. *a and b. and* 499–*E. bot.* 160–*Fuchs.* 535–*Trag.* 696–*J. B.* iii. 770–*Gmel.* iv. 71–*Matth.* 893–*Ger.* 672. 1–*Clus.* ii. 77. 1–*Dod.* 585. 1–*Lob. obs.* 324. 1. *and ic.* i. 595. 1–*Ger. em.* 819. 1–*Park.* 1251. 1–*Pet.* 71. 1.

Petals in several rows, resembling a double flower. The *flower* opens about 7 in the morning; closes about 4 in the afternoon, and then lies down upon the surface of the water. LINN. *Leaf-stalks* and *fruit-stalks* round; within full of pores, 4 of which are generally larger than the rest; hairs interwoven between. *Calyx,* leaves smaller than the outer petals. RELHAN. *Summits* 17 or 18, placed in a circle, and corresponding with as many cells in the germen. *Stamens* fixed to the side of the germen. ST. *Leaves* oval, with a deep notch at the base. *Leafits* nearly central. *Petals* numerous, white.

Water-lily. Water-can. Candock. Watersocks. In slow rivers and ponds. [Marazion Marsh. Mr. STACKHOUSE. River Stow near Stafford. In the large pool at Patshull, Staffordsh. P. July.†

* The roots rubbed with milk destroy crickets and cockroaches. Swine eat it. Goats are not fond of it; cows, sheep, and horses refuse it. LINN. Ray observes that the flowers smell like brandy. An infusion of a pound of the fresh root, to a gallon of water, taken in the dose of a pint night and morning, cured a leprous eruption of the arm.

† It extends itself by long runners which form a root at the end, and send up leaf-stalks in deep water. The root is bulbous. It is one of the most beautiful of the English plants, and may be propagated by transplanting the bulbous roots in winter. Mr. STACKHOUSE. Botanists often affect to despise the labours of the florist, who wishes, by multiplying the petals, to produce double flowers, stigmatising them by the name of monsters. They may be monsters, but they are often beautiful monsters. Who does

TIL'IA. *Bloss.* 5 petals: *cal.* with 5 divisions: *seed-vessel* leather-like, globular, 5-celled, 5-valved, opening at the base.

Europæ'a. T. Flowers without a nectary: berry 4-celled.

E.bot. 610–*Ludw.* 48–*Kniph.* 10–*Sheldr.* 50–*Hunt. evel. at p.* 201. i, *p.* 191. *ed.* 2*d*–*Fl. dan.* 553–*Blackw.* 469–*Matth.* 174–*Ger.* 1298. 1–*Dod.* 838–*Lob. obs.* 606. 1. *and ic.* ii. 188. 1–*Ger. em.* 1483. 1–*Park.* 1407. 2–*Lonic.* i. 33. 3–*Fuchs.* 862–*J. B.* i. *b.* 133–*Trag* 1110.

Leaves heart-shaped, serrated. *Floral-leaf* yellowish green, nearly as long as the fruit-stalks, and attached to it for about half its length. *Blossoms* whitish.

Common Lime Tree. Linden Tree. Woods and hedges. T. July.

Var. 2. Leaves unequally serrated: fruit cottony: cells 5. Du Roi.

Tilia cordata. Mill. du Roi. *Small-leaved Lime*, or *Linden Tree. Bast.* Essex, Sussex, and Lincolnshire. Ray.

Var. 3. Fruit 6-cornered.

Whitstable, Surry, and near Darking. Meer.

Var. 4. Small branches red: leaves with a soft woolliness: fruit 4-cornered. Ray.

Red Lime. Stoken Church Wood. Ray.*

does not admire the flower of the double blossomed cherry? And when, as in the white Water Lily, the petals are naturally multiplied to a great degree, the botanist who turns away with disdain from this splendid object of creation must be fastidious indeed. The petals gradually lessen as they approach the center of the flower, where the outer filaments expanding in breadth gradually assume the form of petals, as is generally the case in the double flowers of our gardens. The roots are used in Ireland and in the island of Jura to dye a dark brown. Swine eat it; goats are not fond of it; cows and horses refuse it. Both the species support the *Aphis aquatilis* and *Leptura aquatica*.

* It flourishes best on the sides of hills, but it will live very well in meadow grounds. It is easily transplanted, and grass grows beneath it; it is useful to form shady walks and clipped hedges. The wood is soft, light, and smooth: close grained, and not subject to the worm. It makes good charcoal for gunpowder and for designers. It is used for leather-cutters' boards and for carved work. It is also employed by the turner. The leaves are dried in some countries as winter food for sheep and goats. Cows eat them in the autumn; but they give a bad taste to the milk. The bark, macerated in water, may be made into ropes and fishing nets. The flowers are fragrant, and afford the best honey for bees. The sap inspissated affords a quantity of sugar. It supports the *Sphinx Tilia; Phalæna lanestris, dispar, antiqua, Psi, Bucephala; Aphis Tiliæ; Acarus telarius.*

CIS'TUS. *Bloss.* 5 petals: *cal.* 5 leaves; 2 of them smaller: *caps.* from 1 to 10-celled; from 3 to 10-valved.

(1) *Shrub-like; without stipulæ.*

C. marifo'lius. Stems trailing: leaves hairy, opposite, oblong, edges rolled back: flowers in bunches.

E. bot. 396–*Dill. elth.* 145. 173–*J. B.* ii. 18.

Stems numerous. *Flowering branches* ascending, hairy. *Leaves* egg-shaped, blunt, opposite, sitting, green on both sides but covered with white hairs. *Bunches* terminating, with 3 or 4 flowers, with small spear-shaped floral-leaves. *Petals* yellow, finely scolloped. Mr. WOODWARD.

Hairy Cistus. C. hirsutus. Huds. *C. anglicus.* Bot. Arr. ed. 3. Mountainous pastures and rocks. On the west side of Betham Bank, a mile from Kendal; Buckbarrowbank-scar, between Bridgsteer and Conswick, and about Cartmell Wells, Lancashire. RAY. Gloddaeth, Caernarvonshire. PENN. West foot of Bwrdd Arthur, Anglesea. Mr. DAVIES *in Penn. Wales* ii. 255. [On Humphrey Head, in Cartmel. Mr. JACKSON] P. May.

(2) *Herbaceous; without stipulæ.*

C. gutta'tus. Leaves opposite, spear-shaped, 3-fibred: bunches without floral leaves.

Dicks. h. s.–*Ger. em.* 1281. 19–*Park.* 661–*J. B.* ii. *a.* 14. 1.

Whole *plant* with expanding hairs. *Stem* upright. *Leaves* sitting, opposite, 3 or 4 pairs. *Bunch* slender, often without floral-leaves. *Flowers* upright, but when just out of blossom pendent. *Fruit* upright. *Petals* with a black spot at the base. *Calyx* 2 of the leaves open. LINN. *Stem* and *leaves* hairy. *Bunches* terminating. *Fruit-stalks* long, slender, without floral-leaves. Mr. WOODW. Flowers pale yellow.

Annual Cistus. Sandy pastures on M. Llech ddue, near Holyhead, Anglesea. And in the island of Jersey. MILLER.
A. June.

(3) *Herbaceous; with stipulæ.*

C. salicifo'lius. Spreading, woolly: flowers in bunches, upright, pedicles horizontal.

Clus. i. 76. 2–*Lob. obs.* 552. 1; *and ic.* ii. 118. 1–*Ger. em.* 1280. 17–*Park.* 661. 7.

Calyx longer than the capsule. LINN. *Petals* yellow, smaller than the calyx, very soon shedding sometimes wanting. HUDS.

Willow-leaved Cistus. Sandy meadows and pastures near Brean-Down, Somersetshire. A. June, July.

(4) *Somewhat shrub-like; with stipulæ.*

Helian'themum. C. Trailing: stipulæ spear-shaped: leaves oblong, edges rolled back, somewhat hairy.

Curt.-Kniph. 12-*Fl. dan.* 101-*Walc.* 5-*Park.* 656. 1-*Clus.* 1. 73. 1-*Lob. ic.* ii. 117. 1-*Ger. em.* 1283. 4-*J. B.* ii. 15. 2-*Lob. ic.* ii. 117. 2-*Ger. em.* 1282. 3-*J. B.* ii. 16. 1-*Ger.* 1100. 3 *and* 2-*Matth.* 744-*Trag.* 221.

Petals nearly circular, very entire, deep yellow, with generally a tawny ring surrounding the receptacle. *Bunch* before flowering nodding. *Leaves* sprinkled with scattered hairs. LINN. *Stems* thread-shaped, a little woolly. *Leaves* egg-spear-shaped, in pairs at each knot of the stem, above green and somewhat hairy, cottony underneath. *Leaf-scales* 4 at each knot of the stem. *Calyx* the 3 *larger leaves* composed of strong green ribs, connected by a semi-transparent dotted membrane; the 2 *outer* spear-shaped, green, and which are more like floral-leaves. *Petals* yellow, a little toothed on the outer part. *Stam.* yellow, *Germen* silky, white. *Style* club-shaped, green. *Capsule*, cell 1, valves 3.

Dwarf Cistus. Little Sun-flower. Sun-flower Cistus. Mountainous meadows and pastures, especially in a calcareous soil. [On Salisbury Craigs, near Edinburgh. Lime rocks near Bristol. On the whole range of high and dry chalky lands with a flinty surface, extending from Salisbury Plain to the North of Gloucestershire.] P. June—Aug.

Var. 2. Blossoms white. Gogmagog Hills.

Var. 3. Blossoms rose-coloured.

Var. 4. *surrejanus.* HUDS. *C. surrejanus*, which see.

Inclined to consider it with Mr. Hudson, as a variety of *C. Helianthemum*, there being so great a resemblance, and the material difference being only the shape of the petals, and that of the calyx, though the last differs but very little. WOODWARD.

surreja'nus. C. Trailing: leaves egg-oblong, somewhat hairy: petals spear-shaped.

Dill. elth. 145. 174.

Differs from the preceding only in the petals being more pointed, narrower and reflected, and the leaves being more hairy. *Bloss.* yellow. *C. Helianthemum.* β. HUDS.

Narrow-petaled Cistus. Near Croydon, Surry. DU BOIS in R. Syn. S. July.

polifo'lius. C. Trailing: leaves oblong egg-shaped, hoary: calyx even: petals serrated.

Dill. elth. 146. 172–*Pluk.* 23. 6.

Flowers white. LINN. *Stems* numerous. *Flowering branches* ascending, cottony, white. *Leaves* opposite, rolled back at the edge, with a prominent mid-rib underneath, cottony, white. *Bunches* terminating. *Fruit-stalks* short. *Leaf-scales* spear-shaped. *Calyx* purplish, slightly hairy; the 2 *outer leaves* spear-shaped, minute. WOODWARD.

Mountain Cistus. Brent Downs, Somersetshire, near the Severn Sea. P. July.

DIGYNIA.

POTE'RIUM. Stamens and pistils in different flowers, on the same plant. *Calyx* 4 leaves: *bloss.* with 4 divisions.

Male. *Stam.* 30 to 40.

Fem. *Drupa* juiceless; beneath; 1 or 2-celled: formed of the indurated tube of the blossom.

P. Thornless: stems somewhat angular. Sanguisor'ba.

Dicks. h. s.–Ludw. 197–*Kniph.* 1–*Curt.–Matth.* 1034–*Dod.* 105. 1–*Lob. obs.* 412. 3; *and it.* i. 718. 2–*Ger. em.* 1045. 1–*Park.* 582. 1–*Ger.* 889. 1–*Sheldr.–Gars.* 457–*Fuchs.* 789–*J. B.* iii. *b.* 116–*Blackw.* 413–*Col. ecphr.* i. 124–*H. ox.* viii. 18. 1.

Barren flower with 2 feeble pistils. *Berry* dry, angular. *Seeds* 4-cornered, tapering to each end. LINN. *Fem.* flowers at the top of the spike. *Flowers* greenish, sometimes purplish on the outside. The plant has the habit of the Sanguisorba officinalis, and its fruit bears also a near resemblance, but the number and disposition of the stamens, &c. will readily distinguish them.

Upland Burnet. In a dry calcareous soil. [Brathay meadows, near Ambleside, and elsewhere in Furness Fells. Mr. ATKINSON. Weaver Hills, Staffordshire. Mr. PITT. St. Vincent's rocks. Salisbury Plain.] P. April, May.*

* The leaves and seeds are mildly astringent, and have been used in dysenteries and hæmorrhages. LEWIS. The young leaves are sometimes used in sallads, and in cool tankards. When bruised they smell like cucumber. It has, of late years, been cultivated, as affording food for cattle early in the spring; and growing so luxuriantly, as to allow of three mowings during the summer. *Bot. arr. ed.* i. *p.* 78;—but not answering the farmers expectations, it is now in a great degree laid aside. Cattle are said not to be fond of it, nor is its produce sufficient to answer the expence attending its culture. CURT. On Salisbury Plain, between Salisbury and Everley, this plant forms almost the whole staple of the herbage over a great extent of that most excellent sheep-walk. It is kept

TRIGYNIA.

DELPHIN'IUM. *Calyx* none: *petals* 5 or 6: *nectary* cloven, horn-shaped behind: *caps.* leguminous, many-seeded.

consol'ida. D. Capsule single: nectary of 1 leaf: stem subdivided.

Riv. pent. 124, *Delphinium–Kniph.* 2–*Ludw.* 54–*Blackw.* 26–*Fl. dan.* 683–*Lonic.* i. 182. 2–*Fuchs.* 27–*Trag.* 569–*J. B.* ii. *a.* 210–*Dod.* 252. 2–*Lob. obs.* 427. 1, *and ic.* i. 739. 2–*Ger. em.* 1083. 5–*Ger.* 923. 4–*Park. par.* 279. 3–*Dod.* 252. 1–*Lob. obs.* 426. 2, *and ic.* i. 739. 1–*Ger. em.* 1082. 1.

Branches round. *Leaves* divided down to the base into 3 or 5 parts, which are deeply cut into slender strap-shaped segments often forked at the end. *Floral-leaves* 2, strap-shaped, opposite. *Petals* irregularly scolloped at the edge; the lateral ones broadest; the uppermost spear-shaped, not blunter than the rest, rather shorter than the nectary, but projecting backwards into a conical tube. *Nectary* placed within the upper petal, *tube* projecting backwards and inclosed within the tube of that petal, the upper side thin and skinny, the under green and fleshy. *Anthers* double, yellow. *Germen* conical, woolly. *Styles* none. *Summits* 2, white, small, fleshy, flatted, and lying close together. *Flowers* blue, by cultivation white, purple, red, or bay.

Wild Lark-spur. Larks-heel. Larks-claw. Larks-toes. Corn fields. Swaffham Field. RAY. Lower road between Cambridge and Gogmagog Hills. RELHAN.—with all the varieties of colour. Mr. WOODWARD. Hinton, Trumpington, Feversham, Cambridgeshire. RELHAN. A. June—Sept.*

sheared very close by the large flocks which depasture on it every day, except here and there a flower stem which is left growing. I have no doubt but it is a most valuable plant in hard stocked sheep pastures.—Cows prefer it to clover, but sheep and horses do not. Mr. PITT. As it only appears in a calcareous soil, the failure in its cultivation may have arisen from want of attention to that circumstance, and cattle may dislike it when fully grown, though when close bitten it proves so valuable to sheep.

* The expressed juice of the petals, with the addition of a little alum, makes a good blue ink. The seeds are acrid and poisonous. When cultivated the blossoms often become double. Sheep and goats eat it. Horses are not fond of it. Cows and swine refuse it. *Phalæna Delphinium* lives upon it. LINN.

PENTAGYNIA.

AQUILE'GIA. *Calyx* none: *petals* 5: *nectaries* 5, horn-shaped, alternating with the petals: *caps.* 5, distinct.

A. Nectaries bowed inwards, nearly equal to the petals: leafits all on leaf-stalks, lobes distant, roundish, bluntish. vulga'ris.

Kniph. 5–*Ludw.* 181–*E. bot.* 297–*Fl. dan.* 695–*Mill. ill.*–*Dod.* 181. 1–*Lob. obs.* 440. 2, *and ic.* i. 761. 1–*Ger. em.* 1093. 1–*H. ox.* xii. 1. *row* 3. 1–*Fuchs.* 102–*Trag.* 137–*J. B.* iii. 484. 1–*Park.* 1367. 1–*Matth.* 629–*Swert.* ii. 8. 9–*Lonic.* i. 85. 1–*Column. phyt.* 1–*Ger.* 935. 1.

Stem upright, 3 feet high, branched, somewhat angular. *Leaves*, the lower on leaf-stalks, doubly 3-fold; *leafits* roundish, with 3 lobes, cut-scolloped; the uppermost leaves finger-like, lobes oval, very entire. *Leaf-stalks* from the root very long. *Blossoms* blue, or purple. *Seeds* black. *Flowers* pendent. LYONS. Sometimes of a yellow green.

Cólumbines. Woóds and thickets. [Upper part of Girling Trough, near Coniston, Kilnsay, Yorkshire. CURT. Bedingham, Norfolk, with blossoms blue, or white; near Swaffham, with blossoms the same, or pale red. Mr. WOODWARD. Near Goldsithney, Cornwall. Mr. WATT. Souston's Roch, near Shelsley, Worcestershire. Mr. BALLARD. About Falmouth. Side of a common near which the Ligusticum cornubiense grows, 1½ mile from Bodmin. St. Vincent's rocks, Bristol.] P. June.*

HEXAGYNIA.

STRATIO'TES. *Sheath* 2 leaves: *cup* 3-cleft, or 3 leaves: *petals* 3: *berry* 6-celled; 6-cornered: beneath.

S. Leaves triangular-sword-shaped: edge fringed with prickles. Aloi'des.

E. bot. 379–*Fl. dan.* 337–*Mill. ill.*–*Bergen de Aloide. at p.* 1–*Dod.* 589. 1–*Lob. obs.* 204. 1, *and ic.* i. 375. 2–*Ger. em.* 825–*Ger.* 677–*Park.* 1249. 1–*J. B.* iii. 787. 1–*Pet.* 71. 5.

* The beauty of its flowers has long introduced it into our flower borders. Goats eat it. Sheep are not fond of it. Cows, horses, and swine refuse it.

Stamens and *Pistils* are generally found in the same flower, but they have been sometimes observed to be on different plants; and where they are found in the same flower, the anthers have been found to be barren. LINN. *Leaves* strap-shaped, pointed, gristly; serratures prickly. *Stalk* 2-edged, 1-flowered. *Sheath* as long as the fruit-stalk; sheath-leaves 2, concave, pointed. *Calyx* leaves 3, white, egg-shaped, blunt. *Petals* egg-shaped, white. LYONS.

Water Aloes. Fresh-water Soldier. Slow streams, and fen ditches. [In Norfolk, very frequent. Mr. WOODWARD. In pools about 4 miles from Holmes Chapel, Chesh. Mr. HUNTER. In the Gyme near Thorn, Yorkshire. Mr. ROBSON.]

P. June—July.*

POLYGYNIA.

ZOSTE'RA. *Spike-stalk* strap-shaped, concealed within a grass-like leaf, bearing the fructifications on one side: *cal.* none: *bloss.* none: *stam.* alternate: *caps.* alternate: *seeds* solitary.

mari'na. Z. Seed-vessels sitting.

E. bot. 467.—*Fl. dan.* 15.

Stems much branched. *Leaves* floating, long, grass-like, blunt, from leaf-scales. *Leaf-scales* sheathing, pointed. *Flowers* in a cavity, 3 or 4 inches long, on one side of the leaf near the base, which is at first covered with a thin transparent skin. WOODW.

Sea Grasswrack. On the sea shores, almost every where. [Salt water ditches, Yarmouth. Mr. WOODWARD.] P. June—Aug.†

* In the autum the plants sink to the bottom of the water, and in the Spring from amongst the leaves of the old plants arise numerous thick suckers, each bearing a young plant, which arises and floats on the surface, where it grows to maturity. Sometimes 8 or 10 form a circle on the surface, to which the strings were radii, and the old plant at the bottom the centre, and in this manner they sometimes rise so thick as entirely to fill up the surface of ditches, preventing all other plants from growing in it. I should suppose the mother plant decays, as the floating plants shoot out fibres, which, if they do not sooner, on sinking probably lay hold of the mud, and these in the Spring, I apprehend, produce the fresh offspring. If such be its mode of growth, it is an example of a biennial of a very singular nature. WOODWARD. A great variety of insects are nourished by this plant; some of them pursue it down to the bottom of the water, and devour the leaves. Swine eat it. Goats refuse it.

† Thrown on the sea shore by the tide, in great plenty, and mounds or walls are built with it to oppose the encroachment of the sea. Exposure to the weather bleaches it white. Buildings are thatched with the green leaves, and it will endure upwards of a century. It is used by the inhabitants of Gothland, in Sweden, as a manure, and also for stuffing beds, in preference to hay, as being softer.—Horses and swine eat it. Cows are not fond of it.

Z. Seed-vessels on pedicles, olive-shaped. ocea'nica.

Lob. obs. 471. 2, *and ic.* ii. 248. 2–*Ger. em.* 1569. 8–*Park.* 1292. 1–*J. B.* iii. 794.

Differs also from Z. *marina*, in the roots being matted into a ball. LINN. It varies much both in the length and breadth of the leaves.

Shores of the Isle of Mersey. Portsea Island at Gatham Haven. RAY. P. June—Aug.

A'RUM. *Sheath* 1 leaf, cone-shaped: *fruitst.* naked above, bearing germens at its bottom, and stamens in the middle.

A. Leaves halberd-shaped, very entire: spike-stalk club- shaped. macula'tum.

Curt. 114–*Riv. mon.* 124. 1, *Arum.*–*Mill. ill.*–*Blackw.* 228 –*Fl. dan.* 505–*Woodv.* 25–*Bulliard*–*Fuchs.* 69–*J. B.* ii. 784–*Dod.* 329. 2–*Lob. obs.* 325. 2, *and ic.* i. 597. 2–*Ger. em.* 834. 1–*H. ox.* xiii. 5, *row* 3. 1–*Lonic.* i. 200. 1 –*Trag.* 774–*Matth.* 596–*Park.* 373. 1. 2.

Spike-stalk, the upper part purple, sometimes buff-coloured, and sometimes mottled with buff and purple. *Germens* greenish yellow, the upper terminating in a hair-like or awl-shaped style or summit, purple at the end. *Anthers* with 2 open cells. *Nectaries*, the row above the stamens exactly similar to the upper germens. *Leaves* generally spotted with black spots, and sometimes with white streaks. *Sheath* conical; pale green. *Berries* red, growing in a naked cluster.

Wake Robin. Cuckowpint. Lords and Ladies. Shady places, ditch banks and rough grounds. [Plentiful in the dingle at Edgbaston.] P. May.*

* The berries ripen about the close of summer. CURT.—The root and the leaves when recent, are so extremely acrid, that it is highly disagreeable to taste them. The root has been employed in medicine as a stimulant, but when reduced to powder it loses much of its acrimony, and there is reason to suppose that the compound powder which takes its name from that plant, owes its virtues chiefly to the other ingredients. There is no doubt but this acrid quality may be turned to very useful purposes, but we must first learn *how to ascertain its dose.*—The root, dried and powdered, is used by the French to wash their skin with, and is sold at a high price, under the name of Cypress Powder. It is undoubtedly a good, and an innocent cosmetic.—When the acrimony of the roots is extracted, either by boiling or baking, they certainly will afford a very mild and wholesome nourishment. Many nations prepare the only bread they have, from plants as acrimonious as this: first dissipating the noxious qualities by the force of heat.—Starch may be made from the roots.

ANEMO'NE. *Cal.* generally none: *petals* 5 to 10: *capsules* many, with awns or tails formed by the style.

(1) *Fruit-stalks with an involucrum; seeds with tails.*

praten'sis. A. Leaves doubly winged: petals the ends turned back.

Woodw. 148–*Clus.* 1. 246. 2–*Dod.* 433. 2–*Lob. ic.* i. 283. 1 *Ger. em.* 386. 4–*Fl. dan.* 611–*Kniph.* 1.

The flower is smaller and of a darker colour than that of the A. pulsatilla, nodding, but the ends of the petals bent back. LINN.

Dark-flowered Anemone. Dry hilly pastures. Whichwood Forest, near Cornbury Quarry, and Burford Downs, Oxfordsh. Dr. SIBTHORPE. P. April.

Pulsatil'la. A. Leaves doubly winged; petals straight.

Ludw. 119–*E. bot.* 51–*Fl. dan.* 153–*Relh. at p.* 208–*Matth.* 620–*Clus.* i. 246. 1–*Dod.* 433. 1–*Lob. obs.* 149. 2, *and ic.* i. 281. 2–*Ger. em.* 385. 1–*Park.* 341. 2–*Kniph.* 1–*H. ox.* iv. 26. *row* 1. 1–*Pet.* 40. 9–*Ger.* 308. 1 *and* 2, *and* 309–*Lonic.* i. 83. 2–*J. B.* iii. 409. 2 *and* 3.

Stem downy, with 1 flower. *Flower* at first covered by the involucrum, afterwards nodding, on a long fruit-stalk. *Involucr.* many-cleft, downy. *Petals* downy without, within smooth, of a deep purple. *Seeds* crowned with the hairy lengthened styles. WOODW.

Pasque Flower. Passe Flower. High pastures, Gogmagog Hills, Hildershaw, Bartlow, Cambridgeshire. Berhack Heath, near Stainford; Leadstone Hall, above a lake in a place called the Close, near Pontefract; Cornbury Park, near Charlbury, Oxfordshire. [Tulip Hills, near Lexham, Norfolk. Mr. PITCHF. Canham Heath near Bury; and Devil's Ditch, Newmarket. Mr. WOODW. Above Sir J. Paul's, Rodborough, Gloucestershire, common. Mr. BAKER.] P. Apr. May.*

(2) *Flowers naked; seeds without tails.*

nemoro'sa. A. Seeds pointed: leafits snipt: stem with 1 flower.

E. bot. 355–*Curt.*–*Kniph.* 1–*Fl. dan.* 549–*Fuchs.* 161–*J. B.* iii. 412. 2–*Lonic.* i. 163. 4–*Trag.* 95. 1–*Ger.* 306. 2–*Walc.* –*Clus.* i. 247. 1–*Dod.* 435. 2–*Lob. obs.* 384. 2 *and ic.* i. 673. 2–*Ger. em.* 383. 2–*Park.* 325. 1–*H. ox.* iv. 28. 10–*Pet.* 40. 9–*Ger.* 307. 3 *and* 4.

* The whole plant is acrid, and blisters the skin. The juice of the petals stains paper green.—Goats and sheep eat it. Horses, cows, and swine refuse it.

Petals 3 inner and 3 outer. LINN. *Plant* smooth, excepting the leaves. *Stem-leaves* doubly 3-fold; *leafits* egg-spear-shaped, variously jagged or lobed; veins slightly hairy. *Petals*, the outer tinged with purple at the base. Mr. WOODWARD. *Stem* and *fruit-stalk* purplish. *Petals*, the outer row with the deepest tinge of purple underneath. The flowers are sometimes double, and sometimes entirely of a purplish red colour.

Wood Anemone. Woods, hedges, and hollow-ways, common. P. April.*

A. Seeds pointed: leafits snipt: petals roundish: stem mostly 2-flowered. ranunculoi'des.

Fuchs. 162–*Trag.* 95. 2–*Lonic.* i. 163. 5–*Kniph.* 1–*Ger.* 306. 1–*Fl. dan.* 140–*Lob. ic.* i. 674. 1–*Ger. em.* 383. 1–*Park.* 325. 5.

Differs from A. *nemorosa* as follows: *Petals* yellow, 2 alternately on the outside, 2 alternately within, and 1 without that which is next to it, and 1 within that which is next to it. *Fruit-stalk* with 2 leafits, the latter of which is at the base. LINN.

Var. 2. *Stem* zigzag at the bottom, supporting only 1 flower: *Fruitst.* naked: *Bloss.* with only 5 petals.

The fig. of Fuchsius and Fl. dan. represent this variety.

Yellow Anemone. Shady places and hedges. Near King's Langley, Herts, and Wrotham, Kent. P. May.

A. Seeds pointed: leafits snipt: petals spear-shaped, numerous. apenni'na.

Curt.–Clus. i. 254. 2–*Dod.* 434. 2.

Petals blue; sometimes elliptical. WOODWARD.

Mountain Anemone. Woods and shady places. Wimbleton Wood, near Harrow on the Hill; Luton Hooe, Bedfordshire. [Near Berkhamstead, Herts. Mr. GOODALL.] P. April.

* The flowers fold up in a curious manner against rain. The whole plant is acrid. When sheep that are unaccustomed to it eat it, it brings on a bloody flux. Goats and sheep eat it. Horses, cows, and swine refuse it. LINN.—The paper in which the dried specimens are preserved is stained brown, which renders it probable that it may be employed as a dye. STOKES.

This plant is sometimes found with yellow dots on the under surface of the leaves, in which state it is figured in Ray 3. 1. at p. 128, and has been mistaken for a Polypodium. Some have supposed these dots the work of an insect, but without sufficient proof. Dr. Pulteney, in Linn. Tr. ii. p. 305, has rendered it probable that they are formed of a minute species of Lycoperdon, though as they may be discovered in their younger state under the outer cuticle of the leaf, it is not obvious how the seeds could be introduced.

These plants are evidently in a diseased state, of a yellow green, and do not bear flowers. The leaf of the Betonica officinalis is liable to be affected in the same manner.

CLE'MATIS. *Cal.* none: *petals* 4, rarely 5 or 6: *styles* permanent: *capsules* many, with tails: *receptacle* a knob.

Vital'ba. C. Leaves winged: leafits heart-shaped, climbing.

E. bot. 612–*Curt.* 244–*Jacq. austr.* 308–*Fuchs.* 97–*Trag.* 818–*J. B.* ii. 125. 1–*Lonic.* 1. 210. 1–*Pet.* 40. 12–*Matth.* 957–*Clus.* i. 122. 2–*Dod.* 404. 1–*Lob. obs.* 345. 2, *and ic.* i 666. 1–*Ger. em.* 886. 1–*Ger.* 739. 1–*Park.* 383. 1–*J. B.* ii. 125. 2–*Pet.* 40. 11.

Petals leather-like, spear-shaped. *Leafits* entire, or toothed. LINN. *Stem* scored. *Leaves* opposite, on leaf-stalks; *leafits* on leaf-stalks. The *leaf-stalks* twine about any thing they can lay hold of, and thus support the plant. *Fruit-stalks* branched, with triple divisions, woolly, from the bosom of the leaves. *Petals* green on the outside, cream coloured within rolled back, scored, woolly. *Styles* becoming very long, slender, crooked, and covered with fine silky hairs.

Traveller's-joy. Great Wild Climber. Virgin's Bower. Honesty. Hedges and shady places, in calcareous soil. [Common in the Southern and Western Countries, but I have not observed it North of Worcestershire.] S. July, Aug.

THALICTRUM. *Cal.* none: *petals* 4 or 5: *capsules* many, rather beaked.

alpi'num. T. Stem unbranched, almost naked: bunch simple, terminating.

Fl. dan. 11–*Lightf.* 13. 1. *at p.* 266–*E. bot.* 262–*Pet.* 71. 12–*H. ox.* ix. 20. 14–*Boerh. ind. alt. at p.* 44.

A delicate little plant, scarcely a span high. *Petals* 4. *Stam.* 12. *Pistils* 8. *Flowers* on crooked fruit-stalks. *Blossoms* brown. LINN. *Root-leaves* compound, on long leaf-stalks. *Stem* leafless, or in very luxuriant specimens with one nearly sitting leaf. The number of Stam. and Pistils variable.

Mountain Rue-weed. Moist rocks and on the sides of alpine rivulets in Scotland and Wales. [On Ben Lomond. Dr. HOPE. On Malghyrdy, Ben Teskerny, and Craig Cailleach. Mr. BROWN. Cronkley Fell, Durham, Mr. ROBSON.] P. June.

fla'vum. T. Stem furrowed, leafy: leafits acute, 3-cleft: panicle much branched, upright, compact; flowers upright.

E. bot. 307–*Kniph.* 5–*Fl. dan.* 939–*Moris. umb.* 12. 2–*H. ox.* ix. 20. *row* 2. 1–*Dod.* 58. 1–*Lob. obs.* 508. 3, *and*

ic. ii. 56. 1–*Ger. em.* 1251. 1–*Park.* 264. 1–*Pet.* 71. 9–*Ger.* 1067. 1–*J. B.* iii. 486.

Root a full yellow. *Petals* 4. *Stam.* 24. *Pistils* 10 to 16. LINN.

Var. 2. Lobes of the leaves narrower, and more wrinkled. LIGHTF.

H. ox. ix. 20. 3.

Leafits the *lower* irregular, sometimes wedge-shaped, with 3 clefts; sometimes oval, entire, with a sort of lobe on one side; the *upper* spear-shaped, entire, or with 3 clefts. *Flowers* numerous, close and thick. WOODWARD; yellowish white.

Meadow Rue-weed. Moist meadows, pastures, and banks of rivers. P. June.*

T. Leaves triply winged: leafits 3-cleft: panicle large, expanding: flowers on crooked fruit-stalks. — mi′nus.

Jacq. austr. 419–*Fl. dan.* 732–*Kniph.* 5–*E. bot.* 11–*Dod.* 58. 2–*Lob. obs.* 508. 2, *and ic.* ii. 56. 2–*Ger. em.* 1251. 2–*Park.* 264. 5–*H. ox.* ix. 20. 12–*Pet.* 71. 10–*Ger.* 1067. 2–*J. B.* iii. 487. 3–*Pet.* 71. 11.

Distinguishable by the purplish points of the *leaves*, and a bluish bloom on the *stem*. LINN. *Leafits* broad and blunt; the number of clefts variable. *Panicle* branched, flowers few, scattered, at first nodding afterwards upright. WOODWARD.

Lesser Rue-weed. Moist mountainous meadows in a calcareous soil. About Newmarket. Linton, and borders of Gogmagog Hills, Cambridgshire, and mountains in Malham and Settle, Yorkshire. RAY.—[Chedder Cliffs, Somersetshire. Dr. FORD.—In the North, and in Caernarvonshire. HUDS.—Gloddaeth, Caernarvonshire. PENN. *Wales.*—Marham, Norfolk. Mr. CROWE.—Skirreth Wood, near Ingleton, and about Kilnsay, Yorkshire. CURT.—Thorp Arch, Yorksh. Mr. AIKIN.—Links of Montrose, also between Caroline Park and Cramond. Mr. BROWN.]
P. July, August.

T. Leaves with many divisions; flowers nodding: flowering branches axillary; 2 or 3 together. — ma′jus.

Jacq. austr. 420.–*E. bot.* 611.

Grows in meadows, or in stoney places with the Th. minus, but is distinct from that. It approaches the Th. sibiricum. It flowers nearly a month sooner than the Th. minus. *Root* perennial, throwing up 1 or 2 stems every year. *Stems* crooked, 2 or

* A cataplasm, made of the leaves, has been known to give relief in the Sciatica. The root dyes wool yellow. Cows, horses, goats, and sheep eat it. Swine are not fond of it. LINN.

3 feet high, cylindrical, scored, purplish green, leafy, panicled. *Branches* always several from the same point, of different lengths. *Leafits* small, egg-shaped or roundish, 2 or 3 cleft towards the end; rather glaucous, green above, quite so underneath. *Flowers* sweet, pendent. *Petals* 4, purplish green. *Stam.* 15 to 20. *Anthers* yellow. *Pistils* 4 to 7. *Seeds* spear-shaped, furrowed, acute. It may be distinguished from the Th. minus by its always sending out 2 or 3 branches from the same knot on the stem or larger branches, and by the leafits being dark green above and glaucous underneath; whilst in the minus the branches rise singly and the leafits are of a lighter green above, and scarcely to be called glaucous underneath. This plant is also much more branched and one third taller than the minus. JACQUIN. This species seems first to have been described by Crantz, in his Stirp. Austr. fasc. ii. p. 108, who particularly notices its differing from the Thalictr. minus in its branches growing 3 together, the darker colour of its leaves, the greyer green of their under surface, and their pellucid veins.

Jacquin observes above that this plant approaches the Thalictr. sibiricum, but omits to mention the differences, which are sufficiently obvious. In that the fruit is different; the stem is green, not purplish, the leafits are finely serrated, and very much smaller than even those of the Th. minus.

In the specimen now before me, which was sent by Mr. Robson of Darlington, the *leaves* are trebly winged, the leafits urn-shaped, 3-cleft at the end; the *petals* 4, purplish; the *stam.* 14 to 18, the *anthers* yellow, the *pistils* from 5 to 7.

[Discovered by Mr. E. ROBSON, about 2 miles from Darlington, in a dry exposed situation, among bushes. He says it frequently attains the height of 4 or 5 feet, and that he has since seen specimens which were collected in Cumberland.] P.

ADO'NIS. *Cal.* 5 leaves: *petals* 5 or more: *nect.* none: *seeds* naked.

æstiva'lis. A. Flowers with 5 petals: fruit egg-shaped.

Cam. epit. 648–*Pet.* 39. 8.

Only 1 or 2 flowers on a plant. *Petals* 5 or 6; longer and narrower in the A. autumnalis; scarlet.

[Corn fields on Salisbury plain, near the road from Ambresbury to Everly.] A. May, June.

autumna'lis. A. Petals about 8: fruit egg-cylindrical.

Curt. 135–*Kniph.* 5–*Clus.* i. 336. 1–*Dod.* 260. 3–*E. bot.* 308–*Lob. obs.* 150, *ic.* i. 283. 2–*Ger. em.* 387–*Ger.* 310. 1–*Park. par.* 291. 5.

The seeds in both species are covered with a thick permanent coat, not opening like a capsule, so that having no proper capsule they may be considered as naked. The shape of the fruit mentioned in the Spec. char. applies to the whole mass of seeds upon the fruitstalk. Several flowers on a plant. *Fruit* oblong or cylindrical, not egg-shaped as in the preceding. *Petals* 7 or 8; dark scarlet almost black at the base.

Adonis Flower. Red Maithes. Red Morocco. Autumnal Pheasants eye. Corn fields. In the counties round London. CURT. A: June, July.*

RANUN'CULUS. *Cal.* deciduous, 5 (or 3) leaved: *petals* 5, (rarely 2, 3 or 8) with a nectariferous scale or pore within the claw: *styles* permanent: *seeds* incrusted, upright.

(1) ***Leaves undivided.***

R. Leaves heart-shaped, angular, on leaf-stalks: stem 1-flowered: flowers with 8 petals: calyx with 3 leaves. Fica'ria.

E. bot. 584–*Ludw.* 52–*Fl. dan.* 499–*Curt.*–*Blackw.* 51–*Walc.*–*Kniph.* 1–*Fuchs.* 867–*J. B.* iii. 468–*Lonic.* i. 166. 1–*Dod.* 49–*Lob. obs.* 323. 1, *and ic.* i. 593. 2–*Ger. em.* 816–*Park.* 617. 3–*Pet.* 38. 1–*Ger.* 669–*Matth.* 831 –*Trag.* 613.

Root composed of oblong egg or club-shaped bulbs. *Leaves* smooth, rather shining. *Cal.* leaves 3 or 4. *Petals* 8 or 9; bright yellow. Small egg-shaped germinating bulbs are said sometimes to be found in the bosom of the leaf-stalks.

Common Pilewort. Lesser Celandine. Ficaria verna. Huds. Meadows and pastures, common. P. April.†

R. Leaves egg-spear-shaped, on leaf-stalks: stem declining. Flam'mula.

Curt.–*E. bot.* 387.–*Fl. dan.* 575–*Dod.* 432. 1–*Lob. obs.* 382. 2, *and ic.* i. 670. 1–*Ger. em.* 961. 2–*H. ox.* iv. 29. 34–*Walc.* 5–*Park.* 1215. 2–*Ger.* 814. 2.

Leafstalks long, rather a doubling of the leaves. *Leaves* more or less toothed or serrated. *Flowers* yellow. The plants with leaves serrated are represented in

* Its beautiful scarlet blossoms have gained it admittance into our gardens.

† The young leaves may be eaten in the spring along with other pot-herbs. Goats and sheep eat it. Cows and horses refuse it. *Curculio dorsalis* is found upon it.

Dod. 432. 2–*Lob. obs.* 382. 3, *and ic.* i. 670. 2–*Ger. em.* 962. 3–*Pet.* 39. 6–*H. ox.* iv. 29. 35–*J. B.* iii. 864. 3–*Ger.* 814. 3–*Park.* 1215. 3.

Lesser Spearwort. Bogs, boggy meadows and sides of rivulets. P. June. Sept.*

Lin'gua. R. Leaves long spear-shaped: stem upright.

E. bot. 100–*Fl. dan.* 755–*Ger.* 814. 1–*Ger. em.* 961. 1–*Park.* 1215. 1–*H. ox.* iv. 29. 33–*Pet.* 39. 5–*J. B.* iii. 865.

Leaf-stalks short. Mr. WOODWARD. A much larger plant than the R. lingua. *Leaves* in length equal to many times their breadth, ending in a long tapering point, but in R. lingua they are in length only 3 or 4 times their breadth, and do not end in a long taper point. They are sometimes toothed at the edge. *Bloss.* large, deep yellow.

Great Spearwort, or *Crowfoot.* Wet pastures and sides of lakes. Bogs on Iver Heath, near Uxbridge. Between Rotherhithe and Deptford. [Bogs on Malvern Chace, Worcestershire. Mr. BALLARD.—Kineson Pool, near Stafford. ST.—Ditches about Restennet, Angus-shire. Mr. BROWN.—Sides of Ancott Pool, Salop. Mr. AIKIN.] P. June, July.

gramin'eus. R. Leaves spear-strap-shaped: stem upright, very smooth, few-flowered.

Bauh. hist. iii. 866. 3.

About a foot high. Leaves quite smooth, sitting, long and narrow like those of the grasses. Flowers pale yellow, smaller than those of the R. lingua.

Specimens brought from North Wales, by Mr. PRITCHARD.

rep'tans. R. Leaves strap-shaped: stem creeping.

Dicks. h. s.–Kniph. 9–*Lightf.* i. *frontispiece–Fl. dan.* 108–*Amman.* 13. 1–*Fl. lapp.* 3. 5.

* It is very acrid. Applied externally it inflames and blisters the skin. Horses eat it. Cows, sheep, goats, and swine refuse it. Its acrimony rises in distillation. Some years ago a man travelled in several parts of England administering vomits, which, like white vitriol, operated the instant they were swallowed. The distilled water of this plant was his medicine; and, from the experience I have had of it, I feel myself authorised to assert, that in the case of poison being swallowed, or other circumstances occurring in which it is desirable to make a patient vomit instantaneously, it is preferable to any other medicine yet known, and does not excite those painful contractions in the upper part of the stomach which the white vitriol sometimes does, thereby defeating the intention for which it was given.

I am almost certain that it is merely a variety of R. *Flammula*, having observed a series of gradations between the two. HALL. WOODWARD. BROWN. It approaches very near to some states of R. *Flammula*. LIGHTF. *Stem* slender. *Leaves* 1 to 4 at each joint, upright. *Flowers* solitary, terminating, or at the joints; small, yellow. WOODWARD.

Narrow-leaved Crowfoot. Sides of lakes, rare. West end of Loch Laver. [Stony margin of Conniston Water, Lancash. Mr. WOODW.—In a field between an old entrenchment and the high road near Manchester race ground. Mr. CALEY. On the margins of Loch Tay. Mr. BROWN.] P. July, Aug.

(2) *Leaves dissected and divided, not uniform.*

R. Root-leaves kidney-shaped, scolloped, cut: stem-leaves fingered, strap-shaped: stem many-flowered. auri'comus.

Curt.–E. bot. 624–*Fuchs.* 156–*Trag.* 97–*J. B.* iii. 857. 3–*Lonic.* i. 162. 2–*Kniph.* 2–*Fl. dan.* 665–*Lob. ic.* 669. 2–*Ger.* 954. 7–*Park.* 326. 7–*Pet.* 38. 2–*H. ox.* iv. 28. 15–*Pet.* 38. 6–*Ger.* 807. 8.

Root-leaf heart-shaped. *Stem-leaves*, the lower bird footed, on leaf-stalks, broader, blunt; the upper fingered, sitting, opposite, embracing the stem. *Stem* forked or 3-forked. *Calyx* united at the base, scarce perceptibly woolly. *Petals* during the season for the leafing of trees wanting, in the season of the flowering of trees 2 or 3, in the season of fruiting 5, whence it may be easily taken for a different plant. LINN. *Nectary* a small oblique hole at the bottom of the petals not covered by any scale. CURT. *Calyx* and *Blossoms* yellow.

Sweet Wood Crowfoot. Goldilocks. Woods, groves, and hedges. [In a clayey soil. Mr. WOODW.] P. April, May.

R. Lower-leaves hand-shaped, the upper fingered: fruit oblong. scelera'tus.

E. bot. 681–*Curt.*–*Fl. dan.* 571–*Fuchs.* 159–*Trag.* 93–*J. B.* iii. 858. 1–*Lonic.* i. 163. 2–*Dod.* 426. 2–*Lob. obs.* 382. 1, *and ic.* i. 669. 1–*Ger. em.* 962. 4–*Park.* 1215. 6–*Pet.* 38. 11–*H. ox.* iv. 29. 27 *and* 28–*Matth.* 610.

Root-leaves kidney-shaped, lobed, on long leaf-stalks. *Petals* small. *Receptacle* egg-shaped. WOODWARD. Plant dark green, succulent, much branched. *Stem* smooth, hollow, thick. *Leaves* smooth, with 3 or 4 deep divisions; segments spear-shaped, more or less jagged. *Flowers* small, yellow. *Fruit* conical, or oblong egg-shaped.

Round-leaved Water Crowfoot. Celery-leaved Crowfoot.
Shallow waters. A. May, June.*

a'cris. R. Calyx expanding: fruit-stalks cylindrical: leaves with 3 divisions, and many clefts, the uppermost strap-shaped.

Curt.-E. bot. 652.-*Woodv.* 246-*Walc.-J. B.* iii. 416-*Blackw.* 31. 2 *and e-Dod.* 426. 1-*Lob. obs.* 379. 2; *and ic.* i. 665. 1-*Park.* 328. 2-*Pet.* 38. 3-*H. ox.* iv. 28. 16.

Stem with hairs laid to. *Cal.* hairy, coloured. *Leaves* hairy, segments black or deep purple at the points; *stem-leaves* sitting, but sheathing the joints. *Leaf-stalks* hairy. *Fruit-stalks* not furrowed. *Bloss.* yellow.

Butter Flower. Butter Cups. Meadows and pastures, very common. P. June, July.†

Var. 2. Fruit-stalks flatted; flowers small.
Pool dam at Edgbaston; the end of June.

(3) *Leaves dissected and divided; uniform.*

parvifio'rus. R. Seeds rough with tubercles ending in hooked points: leaves heart-shaped, hairy, lobed or toothed: stem prostrate.

E. bot. 120-*Ray* 12. 1. *at p.* 326-*H. ox.* iv. 28. 21-*Pet.* 38. 9-*Pluk.* 55. 1.

Whole plant trailing close on the ground. *Root-leaves* on very long leaf-stalks, kidney, or heart-shaped, toothed. *Stem* leaves kidney-shaped; upper ones sitting, simple or with 3 divisions, all the leaves extremely soft to the touch like the nose of a horse. *Flowers* small, yellow. *Seeds* flatted; the hooked prickles very minute.

Small-flowered Crowfoot. Corn fields and meadows, in a gravelly soil. Near Camberwell; and Greenstreet Green not far from Dartford, Kent. [Malvern Hill, Worcestershire. Mr. Ballard.—Near Norwich. Mr. Pitchford.—and Worcester. St.—St. Vincent's Rocks. Mr. Swayne.—Lymington and Lulworth Cove, Dorsetshire. plentiful.] A. May, June.

hedera'ceus. R. Leaves roundish, 3-lobed, very entire: stem creeping.

* The whole plant is very corrosive; and beggars are said to use it to ulcerate their feet, which they expose in that state, to excite compassion.—Goats eat it. Cows, horses, and sheep refuse it.

† Sheep and goats eat it. Cows, horses, and swine refuse it. Linn. Cows and horses leave this plant untouched, though their pasture be ever so bare.—It is very acrid, and easily blisters the skin.

Curt. 247–*Fl. dan.* 321–*J. B.* iii. 782. 2–*H. ox.* iv. 29. 29 –*Pet.* 38. 12.

Leaves shining, some kidney-shaped, lobes nearly heart-shaped. *Leaf-stalks* flatted. *Fruit-stalks* not furrowed. *Petals* spear-shaped, white. *Stam.* 5, 6, 7, rarely more. *Nectaries* yellowish. *Seeds* smooth.

Ivy-leaved Crowfoot. On the mud of slow shallow rivulets. Watery places, ditches, and slow streams. [Frequent in Suffolk. Mr. WOODWARD.] P. June—Aug.

R. aquat'ilis. Leaves under water hair-like; those above with nearly central leaf-stalks.

E. bot. 101–*Pet.* 39. 1–*J. B.* iii. 781. 1–*Barr.* 565–*Dod.* 587. 2–*Lob. obs.* 497. 2, *and ic.* ii. 35. 2–*Ger. em.* 829. 2–*Park.* 1216. 8–*H. ox.* iv. 29. 31.

Flowers on fruit-stalks which arise from the same sheath with the leaves; white, with a yellow spot at the base. *Nectary* a short open tube.

Water Crowfoot. Ponds and ditches. P. May—July.

Var. 2. *large-flowered.* None of the leaves hair-like; flowers very large.

In a pool that had been a quarry, near Sodbury, Gloucestershire. Mr. SWAYNE.

Var. 3. *circinatus.* All the leaves hair-like, forming a roundish outline.

Pluk. 55. 2–*Pet.* 39. 3–*C. B. pr.* 73. 2–*J. B.* iii. 784. 1–*Park.* 1257. 8.

Var. 4. *diffusus.* All the leaves hair-like, segments spreading, outline irregular.

H. ox. iv. 29. 32–*Ger.* 679–*J. B.* iii. 781. 2–*Pet.* 39. 2.

Var. 5. *fluviatilis.* All the leaves hair-like; segments very long, parallel, taking the direction of the stream.

Fl. dan. 376–*J. B.* iii. 782. 1–*Lob. ic.* i. 791. 1–*Ger. em.* 827. 3–*Park.* 1256. 5–*Pet.* 39. 4.

Rivers. River Tame about Tamworth, &c. the Isis, near Oxford, [and in shoals in the Severn, where it is called *Rait.* ST.]

This is a troublesome weed in ponds, otherwise its flowers are very beautiful, when in such profusion as to cover the whole surface of the water. The varieties in the leaves seem entirely occasioned by the greater or less depth of the water, and by its being stagnant or not.*

* So far is this plant from possessing the deleterious qualities usually attributed to it, that Dr. Pulteney, in the fifth Vol. of the Lin. trans. has

hirsu'tus. R. Root fibrous: stem hairy: calyx pimpled, hairy, taper pointed, at length reflected. (CURTIS.)

Curt.–J. B. iii. 417. 3.

Stem more branched and spreading; hairs stiffer and longer than in R. *bulbosus*. *Leaf-stalks* of the lower leaves hollow, and if cut asunder, the nerves appear projecting into the inside of the tube. *Leaves*, lobes 3 more distinct, the middle and outermost rounder and less deeply divided at the edges, the side ones with a portion as if cut out from the inner edge; frequently with irregular pale or whitish spots, and the upper surface beset with projecting points, from which the hairs arise. *Flowers* more numerous, smaller, and *seeds* smaller than in R. *bulbosus*. CURT. *Root*, fibres long, thick, white. *Root-leaves* either entire or 3-lobed, the middle leafit on a leaf-stalk. *Flowers* pale yellow. WOODWARD.

Mr. Curtis thinks it not an uncommon plant, but that its reflected calyx has imposed upon botanists, who from that circumstance have considered it as the R. *bulbosus*.

Moist clayey places, where water has stood during the winter. Salt marshes near Gravesend. RAY.—Various places about London; side of the road between Croydon and Mitcham; and plentifully by the sea side on the gravelly banks about Southampton. CURT.—Road sides, rubbish, &c. Cambridgesh. RELH. [Amongst corn in a clayey soil, and on new made banks of salt marshes, Yarmouth. Mr. WOODWARD.] A. June—Sept.

bulbo'sus. R. Root bulbous: calyx reflected: fruit-stalks furrowed: stem upright, many-flowered: leaves compound.

E. bot. 515–*Mill. ill.*–*Curt.*–*Kniph.* 7–*Walc.*–*Fl. dan.* 551–*Dod.* 431. 1–*Lob. obs.* 380. 3, *and ic.* i. 667. 1–*Ger.* 953. 6–*Park.* 329. 5–*Pet.* 38. 4–*Fuchs.* 160–*J. B.* iii. 417. 4–*Ger.* 806. 6–*Matth.* 614.

Root globular, fibrous at the base. *Stems* a foot high, upright, bare at the base, towards the top leafy, and branched. LYONS. *Calyx* at the bottom thin and semi-transparent. *Stem* never throwing out suckers like the R. *repens*. CURT. *Upper-leaves*, divisions strap-shaped. *Bulb* formed above the bulb of last year. When it comes into flower, the old one, in a dry soil, may be found in a state of decay under the new one, and surrounded by the fibres, but without the least appearance of suckers proceeding from either of them. In a turf containing 6 plants, the roots were all distinct, excepting one, which appeared, from its size, to be a seedling, with the old bulbs at the bottom. *Pe-*

has given ample testimony to its capability of almost alone supporting horses, cows, and pigs in good condition, and the animals eat it with avidity.

tals bright yellow. Mr. Woodw. Bulbous root globular, but compressed. *Nectary* short, inversely heart-shaped; but in the R. *hirsutus*, it is oblong-egg-shaped. This circumstance alone is sufficient to distinguish the two species.

Butter Flower. Butter Cups. Gold Cup. Bulbous Crowfoot. Meadows and pastures. P. May.

R. Calyx expanding: fruit-stalks furrowed: suckers creeping: leaves compound. re'pens.

Curt. 211–*E. bot.* 516–*Blackw.* 31. 1–*Fl. dan.* 795–*Dod.* 425–*Lob. obs.* 379. 1, *and ic.* i. 664. 2–*Ger. em.* 951. 1–*Pet.* 38. 7 *and* 8–*H. ox.* iv. 28. 18–*Pet.* 38. 8–*Ger.* 804. 1.

The stem creeping and striking out roots from the joints, will always distinguish this from the R. bulbosus. *Fruit-stalks* with 5 furrows, and one or two flowers. *Cal.* hairy, deciduous, not reflected. *Bloss.* of a deeper yellow than in the R. acris.

Creeping Crowfoot. Butter Cups. Meadows, pastures, on rubbish under hedges, and in gardens, in moist situations. P. June—Aug.

R. Seeds prickly: upper leaves doubly compound, strap-shaped. arven'sis.

Curt.–*E. bot.* 135–*Kniph.* 12–*Walc.*–*Fl. dan.* 219–*Fuchs.* 157–*J. B.* iii. 859. 1–*Dod.* 427. 2–*Lob. obs.* 380. 1, *and ic.* i. 665. 2–*Ger. em.* 951. 3–*Park.* 328. 4–*H. ox.* iv. 29. 23–*Pet.* 38. 10–*Ger.* 805. 3.

Whole plant pale; upright, branched. *Segments* of the upper leafits strap-shaped. *Flowers* small, pale yellow. *Seeds* more obviously prickly than those of the R. parviflorus. Seeds and flowers existing on the same plants, at the same time.

Corn Crowfoot. Common in corn fields. A. June.*

TROL'LIUS. *Cal.* none: *petals* about 14: *capsules* many, egg-shaped, many-seeded.

T. Petals approaching: nectaries as long as the stamens. Europæ'us.

Kniph. 4–*Fl. dan.* 133–*E. bot.* 28–*Clus.* i. 237. 1–*Dod.* 430. 1–*Lob. obs.* 385. 1, *and ic.* i. 675–*Ger. em.* 955. 12–*Ger.* 809. 13–*J. B.* iii. 419–*H. ox.* xii. 2. 2–*Matth.* 613–*Park. par.* 219. 11.

* It has lately been said that cows, horses, and sheep in Italy eat it greedily, though it is so acrid as to poison the latter. Three ounces of the juice killed a dog in four minutes. Its growing chiefly, if not solely, in cornfields, where cattle are excluded, may possibly be the reason why we have not heard of mischief being done by it in this country.

Blossoms closed, yellow. *Nectaries* yellow, not longer than the stamens. *Germens* upright. LINN. *Leaves* round in their circumscription, divided to the base into 5, segments very entire at the base, jagged upwards. *Capsules* ribbed transversely, terminated by a crooked horn, pointing outwards, giving the head a star-like appearance. Mr. WOODWARD.

Globe-flower. Locker-gowlans. Gowlans Globe-flower. Sides of mountains and mountainous meadows in Wales and the north of England. HUDS.—Skirrith Wood, and moist woods about Settle, Yorkshire. CURT.—Scotland. LIGHTF.—[Near Troutbeck, Westmoreland. WOODWARD. At the road side near Dale Park, in Furness Fells. Mr. ATKINSON.—Marshes in the county of Durham, common. Mr. ROBSON.] P. May, June.

It is cultivated in our flower gardens.

HELLEB'ORUS. *Bloss.* none : *cal.* 5 leaves, often coloured : *nectaries* 2-lipped, tubular : *caps.* like a legumen ; many-seeded, rather upright, beaked.

viri'dis. H. Stem many-flowered, leafy : leaves finger-like.

Jacq. austr. 106–*Curt.*–*Blackw.* 509 *and* 510–*E. bot.* 200–*Kniph.* 1–*Fuchs.* 274–*J. B.* iii. 636–*Clus.* i. 275. 1–*Dod.* 385. 2–*Lob. obs.* 387. 2. *and ic.* i. 680. 2–*Ger. em.* 976. 2–*Park.* 212. 2 *and* 3–*H ox.* xii. 4. 5–*Ger.* 825. 2 –*Trag.* 405–*Lonic.* i. 171. 2–*Matth.* 1221.

Pistils 3, sometimes 4, rarely 5. CRANTZ, Segments of the leaves deeply serrated, particularly upwards. *Flowers* mostly 2 : yellowish green.

Green-flowered Hellebore. Woods and dry pastures in chalky soil. Bigwin Closes, Ditton, and Whitwell, Cambridgeshire. Arundel Castle, Sussex. Knowlton, E. Kent ; and Stoken Church, Oxfordshire. [Orchard near Mr. Ballard's, Robinson's End, Malvern Chace. Mr. WELLS. Near Piersbridge, but scarce. Mr. ROBSON.] P. March—May.

fœt'idus. H. Stem many-flowered, leafy : leaves bird-footed.

E. bot. 613–*Woodv.* 19–*Kniph.* 12–*Blackw.* 57–*Fuchs.* 275 –*J. B.* iii. 880–*Trag.* 251–*Dod.* 386–*Lob. obs.* 387. 4. *and ic.* i. 680. 1–*Ger. em.* 976. 4–*Lob. obs.* 387. 3. *and ic.* i. 679. 2–*Ger. em.* 976. 3–*Park.* 212. 3–*H. ox.* xii. 4. 6–*Ger.* 826.

All the *leaves* on the stem, none towards the root. LINN. *Leaves* deep green. *Branches, leaf-scales, floral-leaves,* and *flowers* pale greenish yellow. *Stipulæ* at the divisions of the

branches oval-spear-shaped, embracing the stem, solitary, with 3 deep clefts at the end tinged with purple. *Floral-leaf* oval-spear-shaped, entire, solitary, at the base of each fruit-stalk, tinged with purple. Mr. Woodward. *Flowers* numerous, somewhat globular, green, sometimes tinged with purple at the edges. *Stem* about a yard high.

Bears-foot. Setterwort. Oxheel. Stinking Hellebore. Meadows, shady places, and hedges. Cherry-hinton, Fulbourn, Triplow, Cambridgeshire. Downs near Chichester, Sussex. Woods between Gounsbery and Blackwell, Somersetshire. [Bath Hills, near Bungay, Suffolk. Mr. Woodward. Woods in Tortworth Park, Gloucestershire. Mr. Baker. Rockingham Forest, Northamptonshire, common. Mr. Pitt.] P. April.*

CALTHA. *Cal.* none : *petals* 5 : *nectaries* none : *caps.* several : many-seeded.

C. palus'tris.

E. bot. 506–*Kniph.* 7–*Munt. phyt.* 426. 122–*Curt.–Fl. dan.* 668–*Matth.* 846–*Clus.* ii. 114. 1–*Dod.* 598. 1–*Lob. obs.* 323. 2. *and ic.* i. 594. 1–*Ger. em.* 817. 1–*Trag.* 142–*J. B.* iii. 470–*Lonic.* i. 88. 3–*Park.* 1213. 1–*Ger.* 670. 2 *and* 1–*Walc.*

Caps. from 4 to 12. Mr. Hollefear. *Leaves* kidney-shaped, entire, sometimes regularly toothed. *Petals* yellow, from 5 to 7. *Stamens* in 2 rows, inner row with broad anthers, outer row twice as long, club-shaped, with the anthers compressed.

Var. 2. Blossoms double.

Park. 1213. 2–*Clus.* ii. 114. 2–*Ger. em.* 818. 3–*Ger.* 681. 3.

Marsh Marigold. Meadow-bouts. Moist meadows. Banks of rivers and pools, common. P. April, May.†

SAGITTA'RIA. *Stam.* and *pist.* in different flowers on the same plant : *cal.* 3 leaves : *bloss.* 3 petals.

* The dried leaves are frequently given to children to destroy worms, but they must be used sparingly, being violent in their operation ; and instances of their fatal effects are recorded. The country people put the root into setons made through the dewlaps of oxen. A decoction of 1 or 2 drams, either of this, or of the preceding species, is a sharp purge.

† The flowers gathered before they expand, and preserved in salted vinegar, are a good substitute for capers. The juice of the petals, boiled with a little alum, stains paper yellow. The remarkable yellowness of butter in the spring has been supposed to be caused by this plant ; but cows will not eat it, unless compelled by extreme hunger, and then, Boerhaave says, it occasions such an inflammation that they generally die. Upon May-day the country people strew the flowers before their doors.

Male. *Filam.* about 24.
Fem. *Seeds* many, naked.

sagittifo'lia. S. Leaves arrow-shaped, acute.

E. bot. 84–*Gies.* 64–*Fl. dan.* 172–*Walc.* 5–*Dod.* 588. 2–*Lob. obs.* 161. 2, *and ic.* i. 302. 1–*Ger. em.* 416. 2–*Park.* 1247. 2–*J. B.* iii. 789–*Pet.* 43. 11.

Stalk with 6 edges *Leaves* all from the root; *the first* which are always under water, long, strap-shaped, by some authors considered as a variety, and well figured in *Fl. dan.* 172, *and ill done in Pet.* 43. 9; the *succeeding*, which rise above the water, arrow-shaped, very entire, smooth, with parallel ribs and a network of veins. *Leaf-stalks* tapering, convex underneath, concave above, covered by the water. *Flowers* 3 in a whirl. *Flower-scales* small, oval spear-shaped, 1 at the base of each fruit-stalk, embracing the stem. *Fruit-stalks* of the barren flowers an inch long, of the fertile flowers about half an inch, and stronger. *Cal.* 1 leaf with 3 divisions. Lower flowers female, the upper male, but with from 1 to 5 pistils; none with stamens only. St. *Flowers* white with a purplish tinge at the claws of the petals, but so readily falling off that it is difficult to carry them home for examination.

Common Arrow-head. Ditches and banks of slow rivers. P. July.*

Var. 2. *smaller. Ger.* 337–*J. B.* iii. 790. 2–*Pet.* 43. 12.

On the Thames shore, over against Lambeth palace; and before the E. of Peterborough's house, above the horse ferry, on Westminster side. *R. Syn.* The other varieties mentioned by authors appear to me to differ merely in size. The δ of Linnæus and β of Hall. is surely imaginary, for the strap-shaped leaves will be always found both before and after flowering. Woodw.

* There is always a bulb at the lower part of the root, growing in the solid earth, beneath the mud. This bulb constitutes a considerable part of the food of the Chinese, and upon that account they cultivate it.—Horses, goats, and swine eat it; cows are not fond of it.

CLASS XIV.

DIDYNAMIA.

GYMNOSPERMIA.

(1) *Cups mostly 5-cleft.*

LEONU'RUS. *Anthers* sprinkled with hard particles.

GLECO'MA. *Anthers* in pairs; each pair forming a cross.

MEN'THA. *Filaments* distant; straight: *Bloss.* nearly regular.

VERBE'NA. *Bloss.* nearly regular: upper segment of the cup shorter.

TEU'CRIUM. *Bloss.* without any upper lip; upper segment of the petal divided.

A'JUGA. *Bloss.* upper lip shorter than the stamens.

GALEOB'DOLON. *Bloss.* upper lip entire, vaulted: lower lip 3-cleft; segments broad, acute: *Anthers* fleshy on the back. (HUDS.)

BETO'NICA. *Bloss.* upper lip flat; ascending: *Tube* cylindrical: *Stam.* as long as the mouth of the tube.

LA'MIUM. *Bloss.* with a bristle-shaped tooth on each side the lower lip, (on each side the mouth.)

GALEOP'SIS. *Bloss.* with 2 teeth upon the lower lip.

STA'CHYS. *Bloss.* lateral segments of the lower lip reflected: *Stamens* after flowering turned to the sides.

NE'PETA. *Bloss.* lower lip scolloped: *Mouth* with the edge reflected.

BALLO'TA. *Cup* with 10 scores: *Bloss.* upper lip vaulted.

MARRU'BIUM. *Cup* with 10 scores: *Bloss.* upper lip flat and straight.

[Origanum. Melissa Nepeta.]

(2) *Cups 2-lipped.*

SCUTELLA'RIA. *Cup* after flowering closed with a cover, and resembling a helmet.

THY'MUS. *Cup* (mouth small;) closed with soft hairs.
(In Melissa Calamintha, and M. Nepeta, the mouth of the cup is also closed with hairs.)*

PRUNEL'LA. *Filaments* all forked at the end.

ORIG'ANUM. *Cups* forming a tiled cone.

CLINOPO'DIUM. *Cups* inclosed in an involucrum.

MELIT'TIS. *Cup* wider than the tube of the blossom: *Upper lip* of the blossom flat; entire *Anthers* crossing each other.

MELIS'SA. *Cup* angular; skin-like; upper lip ascending.

[Teucrium.]

ANGIOSPERMIA.

(1) *Cups. cloven.*

OROBAN'CHE. *Caps.* 1 celled: *Bloss.* nearly equal; 4-cleft: a *gland* under the base of the germen.

(2) *Cups 4-cleft.*

LATHRÆ'A. *Caps.* 1-celled: *Bloss.* gaping: a *gland* under the base of the germen.

BART'SIA. *Caps.* 2-celled: *Bloss.* gaping: *Cup* coloured: *(not coloured in our species.)*

EUPHRA'SIA. *Caps.* 2-celled: *Bloss.* gaping: lower *Anthers* with thorns,

RHINAN'THUS. *Caps.* 2-celled: *Calyx* compressed: *Bloss.* gaping.

MELAMPY'RUM. *Caps.* 2-celled: *Bloss.* gaping: *Seeds* 2; bulging.

(3) *Cups 5-cleft.*

LIMO'SELLA. *Caps.* 1-celled, many-seeded: *Bloss.* bell-shaped; regular.

SCROPHULA'RIA. *Caps.* 2-celled: *Bloss.* facing upwards; the lip with a middle segment more inward.

SIBTHOR'PIA. *Caps.* 2-celled: *Bloss.* wheel-shaped: *Stam.* placed 2 and 2; approaching.

DIGITA'LIS. *Caps.* 2-celled: *Bloss.* (tubular) bell-shaped; bellying on the under side: *Stam.* declining.

ANTIRRHI'NUM. *Caps.* 2-celled: *Bloss.* gaping; with a projecting nectary beneath.

PEDICULA'RIS. *Caps.* 2-celled: *Bloss.* gaping: *Seeds* coated.

LINNÆ'A. *Berry* 3-celled, juiceless: *Bloss.* bell-shaped: *Calyx* superior.

GYMNOSPERMIA.

A'JUGA. *Bloss.* upper lip very small: *stamens* longer than the upper lip.

A. pyramida'lis. Plant woolly, forming a 4-sided pyramid: leaves oblong, toothed: root-leaves the largest.

Fl. dan. 185–*Blackw.* 64. 2.

Plant as taken from the bottom to the top resembling a pyramid, very simple, clothed with leaves pointing 4 ways, gradually increasing in height, the whole often decorated with leaves which, excepting the root-leaves, are of a violet colour, serpentine at the edge, imperfectly scolloped. *Flowers* whitish, or bluish. *Suckers* none. *Flowers* 3 together. LINN. *Stem* and *leaves* very hairy; *root-leaves* oblong wedge-shaped, sitting, entire, very large; *stem-leaves* oval, slightly toothed or scolloped, not 3-lobed, diminishing upwards, so as to give the whole plant somewhat of a pyramidal form; in opposite alternate pairs; the upper tinged with purple. *Floral-leaves* longer than the flowers. *Flowers* from the bosom of the leaves, not more than 3 together. *Calyx* very hairy, divided half way down; *segments* awl-shaped, nearly equal. Mr. WOODWARD.

I have never seen a specimen of British growth; the plant generally taken for it is the A. alpina. Mr. Woodward thinks he had once in his garden the A. pyramidalis, which he received from the North of England, but does not recollect the particular place. Dr. Hope informs me that it has been found on Ben Nevis in Lochaber, and on the Burn of Killogower and Ord of Caithness. B.

A. alpi'na. Stems simple; leaves nearly all of a size. LINN. middle stem-leaves the largest; root-leaves smaller, tapering into leaf-stalks.

E. bot. 477–*Ludw.* 8–*Kniph.* 3–*J. B.* iii. 432. 1–*Pet.* 34. 4–*Riv. mon.* 76; *Bugula montana.*–*H. ox.* xi. 5. 3. *bad.* –*Pluk.* 18. 3; *bad; not agreeing with his description; very unlike the A. pyramidalis, and too meagre for the*

A. alpina–Clus. ii. *p.* 43, *Bugula carneo flore, quoted by Linnæus, seems from the creeping suckers, to be only a hairy var. of the A. reptans.*

" The pairs of leaves and the whorls are rather distant, by no means crowded into a pyramidal form as in A. *pyramidalis*, nor are the radical leaves (as in that species) 3 or 4 times as large as those on the stem, and very hairy; but, on the contrary, the lower leaves are but little larger than the others, and all very nearly smooth, veiny, unequally toothed. The *bracteæ* sometimes quite entire, sometimes toothed; the uppermost only tinged with purple; whereas in A. *pyramidalis*, they are all reddish. *Flowers* from 10 to 20 in each whorl. *Calyx* chiefly hairy at the teeth. *Flowers* pale, streaked with deeper blue." E. bot.

This plant, according to Dr. Smith, has been lately found near Durham by Mr. Robson, and on the summit of a mountain near Castleton, Derbyshire, by Mr. Dawson Turner.

Mountains. Carnedh Llewelyn, Caernarvonshire. RAY.

P. June, July.

rep'tans. A. Plant smooth; with creeping suckers: leaves egg-shaped, scolloped.

E. bot. 489–*Curt.*–*Fl. dan.* 925–*Sheldr.* 35–*Riv. mon.* 75. 1, *Bugula.*–*Fuchs.* 391–*J. B.* iii. 430. 2 *and* 3–*Walc.*–*Kniph.* 3–*Trag.* 311–*Blackw.* 64. 1–*Lonic.* i. 145. 2–*H. ox.* xi. 5. *row* 3. 1–*Barr.* 337 *and* 338–*Matth.* 962–*Dod.* 135. 2–*Lob. obs.* 252. 1, *and ic.* i. 475. 2–*Ger. em.* 631. 1–*Park.* 525–*Ger.* 506. 1.

In high and dry situations it becomes somewhat hairy, the stem less distinctly 4-sided, the spike tapering upwards; the creepers short; approaching to the A. genevensis, but has only 1 stem from a root whilst the latter has many. Mr. GOUGH. *Leaves* egg-shaped. *Root-leaves* scolloped, on leaf-stalks. *Stem-leaves* nearly entire, sitting, in opposite cross pairs; the upper purplish. *Bloss.* blue, red, or white, in long leafy spike.

Common Bugle. Moist meadows, pastures, and woods.

P. May—July.

Chamœ'-pithys. A. Leaves 3-cleft, strap-shaped, very entire: flowers sitting, lateral, solitary: stem spreading.

E. bot. 77–*Kniph.* 8–*Ludw.* 130–*Riv. mon.* 14. 1, *Chamæpithys*–*Fl. dan.* 733–*H. ox.* xi. 22. *row* 3. 1–*Dod.* 46. 1–*Lob. obs.* 207. 2, *and ic.* i. 382. 2–*Ger. em.* 525. 1–*Matth.* 940–*Ger.* 421. 1–*Park.* 283. 1–*Fuchs.* 886–*J. B.* iii. 295. 1 *and* 2–*Trag.* 80–*Blackw.* 528–*Lonic.* i. 159. 2.

Bloss. yellow, with minute red dots. RELHAN. *Stem* hairy.

Leaves hairy, the lower entire, the rest cloven deeper and deeper till the upper ones are almost divided to the base; segments strap shaped. *Flowers* nearly on one side of the stalk, single, or in pairs. *Calyx* very hairy. *Bloss. lower lip*, middle segment somewhat heart-shaped, smooth, the rest very hairy. Mr. Woodw.

Ground Pine. Germander. Teucrium Chamæpithys. Linn. But the structure of the upper lip of the blossom is not like that of the Teucrium, deeply divided with the stamens standing in the division, but short and slightly notched as in the Ajuga. On this account it has been removed from the former genus by Haller, Schreber, &c. and Dr. Smith in E. bot. ranks it as an Ajuga, to which genus it undoubtedly ought to be referred in a practical system.

Sandy fallow fields. On the Lays about the border of Triplow Heath, Cambridgeshire; about Rochester and Dartford, Kent. Roehill. A. April—June.*

TEU'CRIUM. Upper lip upright, deeply divided, even below the base: stamens in the division.

T. Leaves wedge-egg-shaped, cut, scolloped, on leaf-stalks, flowers 3 together: stems somewhat hairy. Chamæ'drys.

E. bot. 680–*Woodv.* 243–*Kniph.* 11–*Tourn.* 97. 1. *f.*–*Sheldr.* 87–*Blackw.* 180–*Riv. mon.* 10–*Fuchs.* 869–*J. B.* iii. 288. 1–*Ger.* 530. 1, 2, *and* 3–*Matth.* 818–*Trag.* 204–*Lonic.* i. 62. 4–*Dod.* 43. 1, *and* 2–*Lob. obs.* 260. 1 *and ic.* i. 491. 1, *and* 2–*Ger. em.* 656. 1 *and* 2–*Park.* 104–*H. ox.* xi. 22, 10 *and* 11–*Clus.* i. 351. 1.

Floral-leaves serrated. *Bloss.* purple; lip flat, with 3 shallow clefts. Linn. *Stem* cylindrical, hairy. *Leaves* on leaf-stalks, deeply jagged, entire at the base, hairy; the upper oval-spear-shaped, often purple. *Flowers* on fruit-stalks. Mr. Woodward. *Calyx* the upper segment broadest, the 2 lower ones narrowest, beset with white globules. *Bloss.* reddish purple, beset without with white globules; middle segment of the lower lip lopped, with a double row of hairs at the base.

Common Germander. Borders of cornfields far from any house. Ruins of Winchelsea Castle. Ray. [Norwich city walls. Mr. Crowe. In the area of Carisbrook Castle in the Isle of Wight. St. Rubbish of Whittington Castle, near Oswestry, Salop. Mr. Dickenson.] P. June, July.†

* This plant has a degree of bitterness and acrimony, but its real use is far from being accurately ascertained. It stands recommended in the gout, jaundice, and intermitting fevers.

† The plant is bitter, with a degree of aroma, and may be used with advantage in weak and relaxed constitutions. It is an ingredient in the celebrated gout powders.

Scorodo'nia. T. Leaves heart-shaped, serrated, on leaf-stalks: flowers in lateral bunches, pointing one way: stem upright.

Curt. 295–*Kniph.* 11–*Blackw.* 9–*Dod.* 291–*Lob. obs.* 262. 1, *and ic.* i. 497. 2–*Ger. em.* 662–*Park.* 111. 2–*H. ox.* xi. 20. 15–*Riv. mon.* 12–*Fl. dan.* 485–*Trag.* 15. 2–*Lonic.* i. 112. 3–*J. B.* iii. 295. 1, *and* 294.

Stems 4-cornered, hairy. *Branches* opposite. *Leaves* heart-spear-shaped, opposite, wrinkled. *Flowers* in pairs. *Calyx* a little woolly, upper lip broad, bent back, pointed; the lower with 4 very shallow clefts terminating in pointed teeth bent inwards. *Bloss.* straw-coloured, woolly; *tube* longer than the calyx; *upper lip* none, but the top of the tube slightly cloven.

Wood Sage. Sage Germander. Woods, heaths, thickets, and ditch banks. P. July.*

Scor'dium. T. Leaves oblong, sitting, toothed, nakedish: flowers in pairs, on fruit-stalks, axillary: stem pubescent, spreading.

E. bot. 828–*Blackw.* 475–*Fl. dan.* 593–*Woodv.* 57–*Matth.* 842–*Ger.* 534. 1 *and* 2–*Trag.* 885–*Riv. mon.* 11–*Scordium.*–*Dod.* 126. 2–*Lob. obs.* 261. 3, *and ic.* i. 497. 1–*Ger. em.* 661–*Park.* 111. 1–*H. ox.* 11. 22. 14–*Lonic.* i. 196. 3–*Fuchs.* 776–*J. B.* iii. 292. 2.

Stem cylindrical, hairy. *Leaves* hairy, sitting, tapering and entire at the base, serrated upwards, those at the top of the branches oval-spear-shaped, nearly entire. *Calyx* hairy, purplish. Lower flowers often solitary. WOODWARD. Flowers pink.

Water Germander. Marshes of the Isle of Ely. Between Cambridge and Histon. Waterbeach. Cottenham. P. July, Aug.†

NE'PETA. *Bloss.* middle segment of the lower lip scolloped; mouth, the edges reflected: stamens approaching.

Cata'ria. N. Flowers in spikes: whirls on short fruit-stalks: leaves on leaf-stalks, heart-shaped, tooth-serrated.

* The people of Jersey are said to make use of it in brewing. It possesses the bitterness and a good deal of the flavour of hops, but upon trial it gave too much colour to the liquor.

† The fresh leaves are bitter and somewhat pungent. Powdered they destroy worms. A decoction of this plant is a good fomentation in gangrenous cases. If cows eat it when compelled by hunger, their milk gets a garlick flavour. Sheep and goats eat it. Horses, cows, and swine refuse it.

E. bot. 137–*Blackw.* 455–*Fl. dan.* 580–*Kniph.* 9–*Dod.* 99–*Lob. obs.* 276. 1, *and ic.* i. 511. 1–*Ger. em.* 682. 1–*Pet.* 32. 1–*Matth.* 719–*Lonic.* i. 112. 1–*Riv. mon.* 52, *Nepeta*–*Trag.* 15. 1–*Ger.* 554. 1–*H. ox.* xi. 6. *row* 2. 3.

Leaves of a velvet-like softness. *Whirls* mostly turned to one side of the stem. *Calyx* downy, with green ribs. *Bloss.* white, with a tinge of red, and spotted with purple; *tube* nearly straight, *lower lip*, middle segment with 6 or 7 equal teeth turned upwards, and set with a tuft of white bristles at the base. *Stamens* rather longer than upper lip. *Stem* and *leaves* white with down.

Nep. Cat-mint. Pastures and hedges in a calcareous soil. [Near Bungay, Suffolk. Woodward. Wick Clifts. Mr. Swayne. —On the beach at Rampside, Low Furness. Mr. Atkinson.—Dudley Castle. Needwood Forest, Staffordsh.] P. July.*

VERBE'NA. *Bloss.* funnel-shaped, segments nearly equal: *calyx* one of its teeth lopped: *seeds* 2 or 4; naked.

V. officina'lis. Spikes thread-shaped, panicled: leaves with many jagged clefts: stem solitary.

E. bot. 767–*Ludw.* 149–*Curt.*–*Kniph.* 4–*Riv. mon.* 56–*Verbena.*–*Woodv.* 218–*Walc.*–*Clus.* ii. 45. 2–*Dod.* 150. 1–*Lob. obs.* 289. 2, *and ic.* i. 534. 2–*Ger. em.* 718. 1–*Park.* 675. 1–*Fl. dan.* 628–*Blackw.* 41–*Trag.* 216–*Matth.* 1052–*Ger.* 580. 1–*Fuchs.* 593–*J. B.* iii. 443–*Lonic.* i. 138. 2.

Lower-leaves deeply lobed, and jagged, the *upper* 3-cleft, or simple. Woodward. *Stem* nearly 4-cornered. *Flowering branches* in opposite pairs. *Floral-leaves* spear-shaped. *Calyx* one of the teeth much smaller and shorter than the rest, but not lopped; angles hairy. *Bloss. tube* fringed at the top with hairs; *mouth* with 2 lips, the upper cloven into 2, the lower into 3 nearly equal segments; purplish. Stamens 4, 2 of them longer. Seeds 4. The structure of the flower and fruit must inevitably lead the English botanist to look for it in this class, though Linnæus has placed it in the class Diandria, because the greater number of species have only 2 stamens.

* An infusion of it is deemed a specific in chlorotic cases. Two ounces of the expressed juice may be given for a dose. Cats are so delighted with this plant, that they can hardly be kept out of the garden wherein it grows. Mr. Miller says, that cats will not meddle with it if it is raised from seeds; and, in support of this opinion, quotes an old saying, "If you set it, the cats will eat it; if you sow it, the cats will not know it." It cannot well be planted without being more or less bruised. Sr.—Sheep eat it. Cows, horses, goats, and swine refuse it.

Vervain. Simpler's Joy. Waste places, stone walls, sides of great roads. [At the foot of St. Vincent's rocks all along the course of the river, very plentiful.] A. Aug.—Sept.

MEN'THA. *Bloss.* nearly equal; 4-cleft: the broader segments notched at the end; *stam.* upright, distant.

Obs. The species and varieties of Mint are not sufficiently ascertained. The proportionate length of the stamens and the blossom seems a variable circumstance, and if so, should not form a part of the specific character.

(1) *Flowers in spikes.* [M. piperita.]

sylves'tris. M. Spikes oblong: leaves oblong, serrated, cottony, sitting: stamens longer than the blossom. Linn. *Sometimes not longer.* Huds.

E. bot. 686–*Kniph.* 9–*Riv. mon.* 51. 1–*Fl. dan.* 484–*Clus.* ii. 32. 1–*Dod.* 96–*Lob. obs.* 273. 1, *and ic.* i. 509. 2–*Ger. em.* 684. 3–*Park.* 38. 6–*H. ox.* xi. 6. 6–*Pet.* 31. 11–*Fuchs.* 292–*J. B.* iii. 221–*Trag.* 20. 1–*Matth.* 714.

Leaves whitish, woolly and cottony underneath. Linn.

Horse Mint. Marshy and watery places. Burwelbeck, Lincolnshire; behind the alm-houses Great Yeldham, Essex. Lewisham, Kent, between Ripley and Guildford. [Bungay, Suffolk, frequent. Woodw. Thorn, Yorkshire. Mr. Robson.] P. Aug.

vir'idis. M. Spikes oblong: leaves spear-shaped, naked, serrated, sitting: stamens longer than the blossom.

Woodv. 270–*Cam. epit.* 477–*Ger.* 552. 2–*Dod.* 95. 4–*Lob. obs.* 271. 4. *and ic.* i. 508. 1–*Ger. em.* 680. 4–*Park.* 31–*Dod.* 95. 3–*Lob. obs.* 271. 3. *and ic.* i. 507. 2–*Ger. em.* 680. 3–*Pet.* 31. 7–*Fuchs.* 290–*J. B.* iii. 220–*Trag.* 20. 2–*Lonic.* i. 113. 2–*Matth.* 712.

Very nearly allied to *M. sylvestris*, but smaller and smoother. *Bloss.* purplish red. Linn. *Leaves* strap-spear-shaped. Spikes of flowers much longer than broad.

Spear-mint. Watery places and banks of rivers. Near Exmouth, Devonshire, and on the banks of the Thames. Huds. P. July, Aug.

Var. β. *many-spiked.* Spikes numerous; leaves spear-shaped.

Differs from the preceding in the following particulars. *Stem* red, taller, thicker, and stronger, and divided at the top into more flowering branches. *Leaves* blacker, shorter, and not so taper-pointed, appearing blunter, more wrinkled, teeth not so

fine. *Flowers* smaller and paler. *Scent* stronger, and not so agreeable. RAY.

M. Villosa. HUDS. On the river side at Bocking, Essex, and on the Medway near Maidstone. RAY.*

M. Spikes oblong: leaves roundish, scolloped, sitting. rotundifo'lia.

E. bot. 446–*Riv. mon.* 51. 2–*Ger.* 555. 1–*Pet.* 31. 12–*J. B.* iii. 219. 2.

Leaves rather serrated than scolloped. Whole plant woolly. Flowers pale red.

Round leaved Mint. Watery places. River side, Lydbrook, near Ross, Herefordshire, near Faulkburn Hall, Essex, and near Hally, Kent. Hornsey and Harefield church-yards. BLACKST. [Near Saltburn, Yorkshire, by the sea, in a dry sandy place. Mr. ROBSON.] P. Aug.

(2) *Flowers in Heads.*

M. Leaves egg-shaped, serrated, nearly sitting, downy: hirsu'ta. stamens longer than the blossom.

E. bot. 447–*Ger.* 555. 2–*J. B.* iii. 224–*Blackw.* 32.

Differs from *M. aquatica* in the leaves having shorter leaf-stalks, agrees in general habit and the stamens being longer than the bloss. *Calyx* fringed. *Pistil* longer than the blossom. *Bloss.* with 4 deep clefts nearly regular. LINN. *Leaves* smaller and more pointed than *M. aquatica*. *Bloss.* purplish white. RAY.

Sides of rivers and wet places. P. Aug.

Var. 2. Heads and leaves smaller, rounder, and blunter. Flowers smaller, not so much branched. RAY.

* The flavour of this species being more agreeable than that of the others, it is generally preferred for culinary and medicinal purposes. A conserve of the leaves is very grateful, and the distilled waters, both simple and spirituous, are universally thought pleasant. The leaves are used in spring sallads; and the juice of them, boiled up with sugar, is formed into tablets. The distilled waters, and the essential oil, are often given to stop retchings, and frequently with success. From the circumstances noticed under *M. arvensis*, it has been imagined, that cataplasms and fomentations of Mint, would dissolve coagulations of milk in the breasts; but Dr. Lewis says, that the curd of milk, digested in a strong infusion of Mint, could not be perceived to be any otherwise affected than by common water; however, milk in which Mint leaves were set to macerate did not coagulate near so soon as an equal quantity of the same milk kept by itself. Dr. Lewis says, that dry Mint, digested in rectified spirits of wine, gives out a tincture, which appears, by day-light, of a fine dark green, but, by candle-light, of a bright red colour. The fact is, that a small quantity of this tincture is green, either by day-light or by candle-light, but a large quantity of it seems impervious to common day-light; however, when held between the eye and a candle, or between the eye and the sun, it appears red; so that if put into a flat bottle it appears either green, or red, as it is viewed through the flat side or through the edge of the bottle.

Ray 10. 1. *at p.* 231.

Round-headed Mint. On the road side from Pevensoy to East Borne. Ray. [Cornwall. Mr. Watt. Near the mill at Lilleshall, Shropshire.]

aquat'ica. M. Leaves egg-shaped, serrated, on leaf-stalks: stamens longer than the blossom.

Kniph. 11–*Riv. mon.* 49. *M. pal. spic*–*H. ox* xi. 7. 6–*Fuchs.* 722–*J. B.* iii. 223–*Matth.* 486–*Dod.* 97–*Lob. obs.* 272. 2, *and ic.* i. 509. 1–*Ger. em.* 684. 1–*Park.* 1243–*Pet.* 31. 6–*Lonic.* i. 114. 1–*(Fl. dan.* 673, *is totally unlike it.)*

The length of the stamens variable. Hudson. *Stem* reddish towards the top, and set with a few bristly hairs pointing downwards. *Leaves* egg-spear-shaped, a little hairy on both sides, sometimes woolly. *Branches* generally shorter than the leaves. *Calyx* coloured, ribbed, hairy without, scored within; teeth not quite equal, glands semi-transparent. *Bloss.* hairy without. *Stamens* half as long again as the blossom, nearly equal. *Bloss.* pale red.

Water Mint. Watery places and banks of rivers. [Sides of the river at Tamworth, the stamens in some specimens longer, in others shorter than the blossom.] P. Aug.

piperi'ta. M. Leaves egg-shaped, on leaf-stalks: stamens shorter than the blossom.

E. bot. 687–*Pet.* 31. 9–*Ray* 10. 2. ***has stamens much longer than the blossom, though referred to by Linn.***

Flowers sometimes in whirls. Huds. *Leaves* broader than the common sort of *Pepper Mint.* But this sort is perhaps rather to be arranged along with the *Water Mints.* Dill. *in R. Syn. Stem* upright. *Blossoms* purplish red. Under each whirl there are 2 pointed, spear-shaped, hairy *floral-leaves.*

Var. 2. Flowers in spikes. Sr.

Woodv. 169–*Knigge diss.*–*Blackw.* 291. 2, *and* 1–*Pet.* 31. 10.

Spikes terminating the stem and upper branches, consisting of from 9 to 12 whirls. *Whirls*, the lower on fruit-stalks at a distance from each other. In external appearance corresponding with *M. viridis*, for which it may easily be mistaken, but in *M. viridis* the stem is taller, the leaves with scarcely any leaf-stalks, narrower in proportion to their length, spikes longer, composed of more whirls. Knigge. This is the Pepper Mint of our gardens. It belongs to the division of the *spicatæ*, has the nearest affinity to the *M. viridis*, and appears to me to be a species distinct from the *M. piperita* of Linnæus. Sr.

Both this and the preceding, viz. the Linnæan M. piperita, possess the same kind of odour and flavour, but in this the flavour is less heavy and more pungent. It is probable they will prove to be distinct species, and even when out of flower they may be distinguished, for in 1, the leaves are egg, or egg-spear-shaped, and somewhat hairy on both sides, so as to give a roughness to the touch. In 2, the leaves are spear-shaped, and quite smooth on the upper surface. This plant sends out suckers very freely.

Pepper Mint. Watery places and sides of rivulets. In Hertfordshire and Essex, and between Newington and Hornsey. [Near the river Tamworth.] P. Aug. Sept.*

(3) *Flowers in whirls.*

M. Leaves egg-shaped, acute, serrated: stamens shorter than the blossom. — gentilis.

E. bot. 449–*Kniph.* 11–*Fl. dan.* 736–*Fuchs.* 291–*J. B.* iii. 217. 1.

Very much resembling *M. arvensis*, but not so hairy, the *stems* red, and the *stamens* not longer than the tube of the blossom. *Whirls* of flowers lateral. *Bloss.* lower segment pointed. *Calyx* sprinkled with resinous dots. Linn. *Stems* red, smooth. *Leaves* bare or slightly hairy. Huds. *Stems* with more or less of a reddish tinge towards the top. *Leaf-stalks* flat, short. *Whirls* composed of 2 lateral umbels on very short fruit-stalks. *Floral-leaves* 4 or 5 under each whirl, 2 spear-shaped, the rest smaller and strap-shaped. *Calyx* slightly ribbed, coloured, sprinkled with shining dots. *Blossom* with white hairs on the outside, and within the tube. *Stamens* all of the same length, shorter than the bloss. *Style* half as long again as the blossom, falling off. *Germens* 4, on a yellowish green fleshy receptacle. *Bloss.* pale red.

Mentha rubra α. Huds. *Red Mint.* Watery places and sides of rivulets. P. July, Aug.

M. Leaves egg-shaped, acute, serrated: stamens as long as the blossoms. — arvensis.

Kniph. 11–*Fl. dan.* 512–*Fuchs.* 435–*Trag.* 16. 2–*J. B.* iii. 217. 2–*Lob. obs.* 270. 1, *and ic.* i. 505. 2–*Ger. em.* 684. 2–*Park.* 37. 5–*Pet.* 31. 5–*Matth.* 718–*Trag.* 24–*H. ox.* xi. 7, *row* 2. 5. *f.* 2.

* The stem and leaves are beset with numbers of very minute glands, containing the essential oil, which rises plentifully in distillation. Pepper Mint water is well-known as a carminative and anti-spasmodic. The essence of Pepper Mint is an elegant medicine, and possesses the most active properties of the plant.

Stems spreading. *Whirls* lateral. Whole *plant* hairy. *Stamens* equal in length to the border of the blossom. *Bloss.* lower segment blunt. *Calyx* hoary. LINN. *Stamens* often lie within the tube, so that were it not for the blunt middle segment of the blossom, it might be supposed to be *M. gentilis.* POLLICH. Whole *plant* covered with soft white hairs, of a paler green than *M. gentilis.* *Stem* not tinged with red; hairs pointing downwards. *Leaves* towards the top egg-spear-shaped, towards the bottom roundish. *Whirls* composed of 2 opposite umbels, sitting. *Calyx* pale green, beset with soft white hairs, interspersed with very minute semi-transparent glands. *Blossoms* hairy within and without. *Stamens* in some plants longer than the blossom.

Corn Mint. Watery places and moist corn fields.

P. July—Sept.

Var. 2. *sativa.* Stamens longer than the blossom. *M. sativa.* LINN. In this variety the leaves are sometimes smooth.

E. bot. 448–*Fl. dan.* 794–*Riv. mon.* 48. 1. *M. vert.*–*H. ox.* xi. 7. *row* 1.

Marsh Mint. Marshy places, sides of rivulets, and gardens.

P. July, August.*

Var. 3. Leaves smaller and smoother. Ray Syn. 232. 2. *M. rubra* β Huds. Side of the new river the upper end of Stoke Newington. Hop ground at Bocking. RAY.

Pule'gium. M. Leaves egg-shaped, blunt, somewhat scolloped: stems roundish, creeping: stamens longer than the bloss.

Ludw. 195–*Blackw.* 302–*Riv.* 23. 1, *Pulegium*–*Woodv.* 171–*Fuchs.* 198–*J. B.* iii. 256, 2–*Trag.* 23–*Matth.* 704–*Dod.* 282–*Lob. obs.* 266. *and ic.* i. 500. 1–*Ger. em.* 671. 1–*Pet.* 32. 2–*Park.* 29–*Lonic.* i. 114. 3–*H. ox.* xi. 7. *row* 2. 1.

Stems with 4 blunt corners, hairy, branched. *Leaves* thick, slightly toothed, underneath set with deep semi-transparent dots. *Bloss.* twice as long as the calyx, hairy without. *Stamens* equal. *Pistils* as long as the stamens. *Bloss.* pale purple.

Pennyroyal Mint. Moist heaths and pastures. [Side of a pool at Robert's End, near Hanley Castle, Worcestersh. Mr. BALLARD. Side of a pool at Erdington, Warwicksh.]

P. Aug. Sept.†

* It prevents the coagulation of milk; and when cows have eaten it, as they will do largely at the end of summer, when the pastures are bare, and hunger distresses them, their milk can hardly be made to yield cheese; a circumstance which sometimes puzzles the dairy maids. Horses nd goats eat it; sheep are not fond of it; cows and swine refuse it.

† The expressed juice, with a little sugar, is not a bad medicine in the hooping cough. A simple and a spirituous water, distilled from the dried

GLECO'MA. *Cal.* 5-cleft: *anthers* in pairs, each pair forming a cross.

G. Leaves kidney-shaped, scolloped. Hedera'ce

E. bot. 853–*Ludw.* 62–*Vaill.* 6. 5 *and* 6–*Curt.* 143–*Woodv.* 28–*Fl. dan.* 789–*Riv. mon.* 67. 2, *H. minor*–*Lonic.* i. 205. 2–*Matth.* 626–*Dod.* 394–*Lob. obs.* 336. 2. *and ic.* i. 613. 2–*Ger. em.* 856. 1–*Park.* 677. *b*–*Walc.*–*J B.* ii. 855. 2–*Ger.* 705–*Fuchs.* 876–*Blackw.* 225–*Trag.* 799.

The *stamens* are sometimes imperfect, consisting of filaments only half the usual length, and terminated by a reddish blunt point; sometimes they are furnished with anthers, pale brown, containing no pollen, and scarcely broader than the filaments. St. *Roots* sending out trailing suckers. *Leaves* heart-kidney or heart-shaped, beset underneath with hollow dots, in which are glands secreting an essential oil, and above with little eminences, but which do not secrete any odoriferous oil, for this surface being rubbed gives out no peculiar scent, whereas the under surface affords a pleasant reviving odour. *Bloss.* blue; sometimes, though rarely, flesh-colour.

Var. 2. More upright and more hairy.

Riv. mon. 67. 1, *Hedera terrestris*–*Vaill.* 6. 5–*Clus.* ii. 38. 2 –*Ger. em.* 704. 6–*Park.* 677. *a.*

[Near Worcester. St.]

Gill. Ground Ivy. Cats-foot. Ale-hoof. Tun-hoof. Robin run in the hedge. Groves, hedges, and shady places.

P. April, May.*

LA'MIUM. *Bloss.* upper lip entire, vaulted; lower lip inversely heart-shaped: mouth with a bristle-shaped tooth on each side.

dried leaves, are kept in the shops. They are prescribed in hysterical affections, and are not without considerable anti-spasmodic properties. An infusion of the plant may be used with the same intention. *Musca pipiens; Cassida viridis, Phalæna Chrysitis* live upon the different species.

* The leaves thrown into the vat with ale, clarify it and give it a flavour. Ale thus prepared is often drank as an antiscorbutic. An infusion of the leaves is commonly taken as tea, and proves slightly tonic, expectorant, and aperient. The expressed juice, mixed with a little wine, and applied morning and evening, destroys the white specks upon horses' eyes. The plants that grow near it do not flourish.—It is said to be hurtful to horses if they eat much of it. Sheep eat it; horses are not fond of it; cows, goats, and swine refuse it. Little protuberances, composed of many cells, are sometimes found upon the leaves, and are occasioned by insects. The *Phalæna Ibatrix* and the *Cynips Glecomæ* live upon it. Linn.

al'bum. **L.** Leaves heart-shaped, tapering to a point, serrated, on leaf-stalks: flowers about 20 in a whirl.

E. bot. 768–*Ludw.* 162–*Curt.* 115–*Kniph.* 3–*Riv. mon.* 62. 1–*Fl. dan.* 594–*Blackw.* 33–*Walc.*–*Trag.* 8. 1–*Ger.* 566–*Matth.* 1129–*Dod.* 153. 1–*Lob.* 280. 2. *and ic.* i. 520. 2–*Ger. em.* 702. 1–*Park.* 605. 3.

Flowers white, sometimes, though rarely, with a pinky tinge; 12 to 20 in a whirl. *Anthers* hairy, black.

White Archangel. White Dead Nettle. On rubbish, corn-fields, and ditch banks. P. May, June.

purpu'reum. **L.** Leaves heart-shaped, blunt, on leaf-stalks.

E. bot. 769–*Curt.*–*Sheldr.* 69–*Fl. dan.* 523–*Blackw.* 182. 1–*Kniph.* 3–*Riv. mon.* 62. 2, *Galeopsis minor*–*Ger.* 568. 4–*Walc.*–*Dod.* 153. 2–*Lob. obs.* 280. 1. *and ic.* i. 120. 1–*Ger. em.* 703. 3–*Park.* 605. 1. *and* 587. 11–*H. ox.* xi. 11. 9.

Flowers 6 in the bosom of each leaf, in a double row. *Calyx* awned, fringed. Lyons. *Leaves* serrated, downy, but not rough; the ends often with a purplish tinge, and mostly pointing downwards. *Bloss.* lower border of the mouth whitish, with purple streaks, the rest pale red; sometimes nearly white.

Red Dead Nettle, or *Archangel. Dee Nettle.* Rubbish, corn-fields, and kitchen gardens. A. April—Sept.

dissec'tum. **L.** Leaves deeply and irregularly cut, stem-leaves extending down the leaf-stalks.

Pet. 33. 3–*Pluk.* 41. 3.

Leaves deeply cut, so as almost to be lobed, tapering down into leaf-stalks. Mr. Woodward. Mr. Woodward suspecting this might be distinct from the *L. purpureum*, wished it to be cultivated in order to ascertain that point. Mr. Robson, with this view, introduced it into his garden, where it has shed its seed, and propagated itself 3 or 4 times, and all the plants have been of the same kind. It flowers and ripens its seeds, and these seeds produce others twice in the summer. He further observes, that bosh sorts are common about Darlington, often growing together, we may therefore conclude that the difference is not owing to soil and situation. *Lamium rubrum minus foliis profunde incisis.* Ray Syn. 240. *L. purpureum*, β Huds. and Bot. Arr. ed. ii.

Kitchen gardens and fallow fields, not unfrequent. On a bank between Pimlico and Chelsea. Curt. A. April—Sept.*

* The young leaves both of this and the preceding species may be eaten with other pot-herbs. Goats, sheep, and horses eat it; cows refuse it.

L. Floral-leaves sitting, embracing the stem, blunt. amplexicau'le.

E. bot. 770–*Curt.* 109–*Kniph.* 11–*Riv. mon.* 63. 1 *and* 2–*Fl. dan.* 752–*Lob. ic.* i. 463. 2–*Ger. em.* 616. 4–*Park.* 762. 2–*Pet.* 33. 4–*H. ox.* xi. 11. 12–*Ger.* 493. 4.

Flowers of 2 kinds, the first expanding in February and March, only a little longer than the calyx, the latter opening in May and June, 4 times as long as the calyx, all containing stamens and pistils. CURT. *Lower-leaves* on leaf-stalks, heart-shaped, blunt, deeply and bluntly serrated, the *upper* in opposite pairs, heart-shaped broad, sitting, inclosing but not embracing the stem, with 5 lobes: lobes scolloped, the middle one as broad again, and with 3 clefts at the end, the lateral ones small. *Bloss.* purple. Mr. WOODWARD.

Great Henbit. Henbit Archangel. Pollichia amplexicaulis. Gmelin. Sandy cornfields, and cultivated ground.

A. Feb.—June.

GALEOP'SIS. *Bloss.* upper lip vaulted, somewhat scolloped; lower lip 3-cleft: mouth with a concave taper-pointed tooth on each side.

G. All the whirls remote; calyxes bell-shaped, pubescent; teeth longer, strap-bristle-shaped, diverging. La'danum.

Kniph. 12–*Riv. mon.* 24. 1–*Pet.* 33. 11.

Stem, knots scarce sensibly swoln. *Cal.* teeth hardly to be called thorny or pungent. *Bloss.* helmet kneeled. LINN. *Stem* upright, 4-cornered, somewhat hairy, with spreading branches. *Leaves* opposite, on leaf-stalks, sometimes spear-shaped, serrated, and sometimes very entire; taper-pointed, naked, or somewhat hairy, with 3 or 4 serratures on each edge. *Flowers* red, slightly woolly. *Bloss. helmet* toothed; *lips* scolloped, the middlemost segment red and white. *Cal.* teeth taper-pointed, or thorny. HUDS.

Cornfields in a calcareous soil, frequent. A. June—Aug.

Var. 2. Calyx woolly.

Stems branched, thickest upward. *Leaves* entire, or distantly toothed, mostly pointing downwards. *Cal.* very hairy at the edges, and on the outside; teeth terminated by awns as long as the teeth. *Blossoms* reddish purple; *upper lip* oval, hairy without; *lower lip* bent back, irregularly scolloped, with 2 oval yellow spots; teeth not observable. I suspect this will prove a different species, at least it differs from the preceding in three very striking circumstances, viz. the stem thickening upwards, the great woolliness of the calyx, and the blossoms being larger though shorter.

[At the foot of Scoot Scar near Kendal, and Giggleswick Scar near Settle. Mr. Gough.]

In a cornfield 2 miles west of Stratford upon Avon, near a limestone quarry. A. Sept.

grandiflo'ra. G. All the whirls remote: calyxes tubular, very hairy; teeth spear-shaped, taper-pointed, short, straight.

Dicks. h. s.–Riv. mon. 24. 2–*Pet.* 33. 10.

Stem upright, 4 cornered, of equal thickness between each joint; branching, woolly. *Leaves* serrated, woolly, or silky, on leaf-stalks, opposite; those near the root egg-shaped, those of the stem spear-shaped, taper-pointed, with straight veins. *Cal.* teeth thorny. *Bloss.* yellow, woolly; helmet toothed; lips scolloped. In habit it agrees with the G. *Ladanum*, but differs in breadth, serratures, veins and soft hairs of the leaves, and in the colour of the blossoms. Huds. The hairs on the calyxes in this species are straight and glandular, but in the preceding white, and curled like wool or cotton.

G. *villosa*. Huds. Sandy cornfields, Yorkshire and Lancashire. Near Newark, and about Bangor. A. July, Aug.

Te'trahit. G. Upper whirls nearly contiguous: calyx bellying, teeth very long, bristle-shaped, equal: stem swollen below the joints.

Riv. mon. 31, *Cannab. spur–E. bot.* 207–*Knipb.* 8–*Dod.* 153. 4–*Lob. ic.* i. 527. 2–*Ger. em.* 709. 2. *a.*–*Ger. em.* 709. 1–*Ger.* 573–*Pet.* 33. 8.

Knots swoln. *Cal.* teeth thorny. *Blossom* helmet scolloped. Linn. *Bloss.* generally purple, sometimes white. Ray. *Calyx* teeth terminated by sharp awns as long again as those of G. *Ladanum*. Mr. Woodward. *Bloss.* nearly $\frac{1}{4}$ of an inch long.

Var. 2. Blossoms white, and much larger than those of 1.

Cannabis spuria flore albo magno eleganti. R. Syn. 240.

Var. 3. Terminating flower salver-shaped.

Found by Dr. Smith at Matlock in 1788. The terminating flowers were always regularly 4-cleft, and salver-shaped, with 4 equal stamens, while all the rest had their proper form. See E. Bot. 207.

In all these varieties the leaves are egg-spear-shaped, and only upper parts of the stem and branches are hairy.

Nettle Hemp Allheal. Hedge banks, borders of Cornfields, and amongst rubbish. A. July, Aug.

canna'bina. G. Upper whirls nearly contiguous: calyx tubular, shorter teeth strap-shaped, unequal, 3 of them larger.

Curt.–E. bot. 667–*Riv. mon.* 32, *Cannab. spur. fl. maj.–Fl. dan.* 929–*Barr. ic.* 1158–*Lob. ic.* i. 527. 3–*Ger.em.* 709. 2. *b–Park.* 599. 1–*Pluk.* 41. 4.

The specific character will hardly distinguish this from the G. *Tetrahit*, but an attention to the following circumstances will do it. *Stem* and branches very hairy in every part. *Leaves* paler green and more hairy underneath. *Calyxes* purplish red. *Bloss.* about 1 inch long, pale yellow; lower lip deeper yellow, its middle segment purple. The seeds produced similar plants year after year, and the beauty of its blossoms might challenge a place in the flower garden. G. *Tetrahit*, γ Fl. Lapp. and Suec. ♂Huds. Ray Syn. 241. 9. G. *versicolor*. CURT.

It varies in having the leaves broad and egg-spear-shaped, or narrower and spear-shaped.

[Hedges at Kirkby in Furness, and in fallow ground near Hutton Roof, Westmoreland. Mr. ATKINSON. Moist cornfields in a gravelly soil, and under a moist hedge at Birches green near Birmingham.] A. July, Aug.

GALEOB'DOLON. *Bloss.* upper lip entire, vaulted; lower lip without teeth, 3-cleft; segments broad, pointed: *anthers* fleshy on the back.

G. (HUDS.) lu'teum.

Curt. 223; *Galeobdolon Galeopsis–E. bot.* 787–*Walc.–Dod.* 153. 3–*Lob. ic.* i. 521. 1–*Ger. em.* 702. 2–*Park.* 606–*H. ox.* xi. 11. 5–*Pet.* 33. 6–*Riv. mon.* 20. 2, *Lam. fl. lut. Kniph.* 3–*Ger.* 567. 2–*J. B.* iii. 323. 1.

Lower leaves heart-shaped; the upper egg-shaped, pointed. *Flowers* in whirls, sitting, 6 to 12 in a whirl. *Whirls* with an Involucrum. *Bloss.* yellow; middle segment of the lower lip tawny, marked with 3 lines. HUDS.—*Floral-leaves* bristle-shaped, 1 at the base of each flower. *Bloss.* lower lip beautifully striped and spotted with deep orange. Mr. WOODWARD. *Stems* 4-cornered, furrowed. *Leaves* spear-shaped, on leaf-stalks, unequally serrated, hairy, especially at the edges. *Whirls* the uppermost with 6 flowers, the rest with from 7 to 10. *Involucr.* leaves growing to the base of the calyxes. *Anthers* fleshy or glandular on the back part. *Seeds* oblong, convex on the outer side, 3-cornered on the inner. *Galeopsis Galeobdolon.* Linn. *Pollichia Galeobdolon.* Gmelin, who includes under his genus Pollichia the Lamium amplexicaule, but that has teeth on the side of the blossom, and the name Pollichia had before been given to another plant. See Hort. Kew. and Schreber.

Yellow Archangel. Yellow Dead Nettle, or *Weasel snout.* Woods, shady places, and moist hedges. [Bath Hills, near Bungay, Suffolk; and woods, Norfolk. Mr. Woodw.—Hedges near Malvern Chace. Mr. Ballard.—Woods near Worcester. St.—Staffordshire and Warwickshire, frequent.] P. May.

BETO'NICA. *Calyx* awned: *bloss.* upper lip upright, flat; tube cylindrical.

officina'lis. B. Spike interrupted: blossom upper lip entire, lower lip the middle segment notched; calyxes smoothish.

Ludw. 2–*Curt.* 154–*Kniph.* 5, *and* 11–*Riv. mon.* 28, *Betonica.*–*Woodv.* 244–*Walc.* 5–*Ger.* 577. 1–*Blackw.* 46–*Sheldr.* 36–*Fl. dan.* 726–*Lonic.* i. 138. 1–*Tourn.* 96–*Clus.* ii. 39. 1–*Dod.* 40. 1–*Lob. obs.* 286. 4, *and ic.* i. 532. 2–*Ger. em.* 714–*Park.* 614. 1–*H. ox.* xi. 5. *row* 1. 1. *f.* 1–*Pet.* 32. 6–*Fuchs.* 351–*Trag.* 198–*J. B.* 301–*Matth.* 944–*Ger.* 577. 2.

Stems square, hairy. *Root-leaves* oblong-heart-shaped, scolloped, hairy, on long leaf-stalks. *Stem-leaves* distant, spear-shaped, serrated Mr. Woodward. Stem-leaves more strap than spear-shaped. Hairs on the stem laid flat and pointing downwards. Bloss. purple.

Var 2. White flowered.

Wood Betony. Woods and shady groves. [Plentiful about Manchester, both in shady and exposed places. Mr. Caley. Meadows in St. Faith's, near Norwich. Mr. Crowe. Ripton, Huntingdonshire. Pastures, Herts. Mr. Woodward.] P. July, Aug.*

STA'CHYS. *Bloss.* upper lip vaulted; lower lip bent back at the sides, the larger middle segment notched: stamens after shedding the pollen bent to the sides.

sylvat'ica. S. Six flowers in a whirl: leaves heart-shaped, on leaf-stalks.

Curt. 183–*E. bot.* 416–*Fl. dan.* 1102–*Riv. mon.* 26. 2, *Stachys sylvatica.*–*Blackw.* 84. 2–*Clus.* ii. 36. 1–*Ger. em.*

* This plant was formerly much used in medicine, but it is discarded from the modern practice: however, it is not destitute of virtues, for when fresh it intoxicates, and the dried leaves excite sneezing. It is often smoaked as tobacco. The root provokes vomiting. Sheep eat it. Goats refuse it.

704. 5–*Park.* 908. 1–*H. ox* xi. 11. 10–*Pet.* 32. 7–*Trag.* 5–*Lonic.* i. 109. 3–*Blackw.* 84. 1.

Stem leaves and *calyx* hairy. *Floral-leaves* spear-shaped, pointed. *Blossoms* deep purple with white spots. Mr. Woodward. Tube of the bloss. much longer than the calyx.

Var. 2. Leaves angular.

Hedge Nettle Woundwort. Hedges and woods. P. July, Aug.*

Var. 2. Huds. Smaller. Leaves angular.

S. palus'tris. About 6 flowers in a whirl: leaves strap-spear-shaped, half embracing the stem sitting.

Curt. 208–*Fl. dan.* 1103–*Knipb.* 7–*Riv. mon.* 26. 1, *Stachys palustris.*–*Sheldr.* 45–*Ger.* 565. 2–*Ger. em.* 1005–*Blackw.* 273–*Ger.* 852–*Park.* 852–*Pet.* 33. 9.

Whirls with 6 to 10 flowers. Linn. *Stems* 4-cornered, rough with hairs pointing downwards. *Leaves* in opposite pairs, very soft, unequally serrated, spreading half way round the stem. *Floral-leaves*, 2 small ones under each whirl. *Calyx* purple, beset with fine hairs terminating in small globules. *Bloss.* reddish purple, mottled; tube white; mouth compressed; upper lip, and all the segments of the lower lip, slightly notched at the end.

Clowns Woundwort, or All-heal. Watery places and banks of rivers. P. Aug.

S. arven'sis. Six flowers in a whirl: leaves blunt, almost naked: blossoms as long as the calyx: stem feeble.

Curt. 246–*Fl. dan.* 587–*Riv. mon.* 27. 2, *Stachys arv. min.*–*Pet.* 33. 12.

Stem 4-cornered, blunt, with spreading branches: rough with hair. *Leaves* heart-shaped, bluntly serrated, much less hairy than the stem. *Leaf-stalks* hairy. *Cups* sitting, hairy, with 5 equal, sharp-pointed, shallow clefts. *Bloss.* whitish, almost smaller than the cup; helmet very entire; lip with 3 cleft, the middle one the broadest, purplish, dotted, not nicked. Linn. *Blossoms* flesh-coloured. Hall. It neither possesses the striking character of any other genus, nor sufficient marks of distinction to form a genus by itself. Curt. Tube of the blosom not longer than the calyx.

Corn Woundwort. In cornfields. [Thorp Arch, Yorkshire. Rev. Mr. Pierson. On St. Vincent's rocks, Bristol.] A. June—Aug.

* It will dye yellow. The whole plant has a fœtid smell, and toads are thought to be fond of living under its shade. Sheep and goats eat it. Horses, cows, and swine refuse it.

german'ica. S. Many flowers in a whirl: serratures of the leaves lapping over each other: stem cottony.

Jacq. austr. 319–*Kniph.* 10–*E. bot.* 829–*Riv. mon.* 27. 1, *Stachys mont.*–*Fl. dan.* 684–*Barr. ic.* 297–*Fuchs.* 766–*J.B.* iii. 320–*Trag.* 9. 1–*Lonic.* i. 110. 1–ii. 30. 4–*Ger.* 563. 2–*Matth.* 830–*Dod.* 90. 3–*Lob. obs.* 285. 4, *and ic.* i. 530. 2–*Ger. em.* 695. 2–*Park.* 48. 2–*H. ox.* xi. 10. 1.

Whole *plant* white with a thick silky down. *Lower-leaves* heart-spear-shaped; the *upper* spear-shaped, thick wrinkled, sharply serrated. *Bloss.* lip covered with down. Mr. Woodw. *Leaves* very thick, soft and cloth-like. *Bloss.* purplish red.

Base Horehound. German Woundwort. Hedges about Witney Park, Oxfordshire, plentifully, and 4 miles S. of Grantham, near the London road, opposite Easton. [Frequent in Oxfordshire. Mr. Newberry.—Between Blenheim and Ditchly. Woodw.] P. July.

BALLO'TA. *Calyx* salver-shaped, with 5 teeth and 10 scores: *bloss.* upper lip concave, scolloped.

ni'gra. B. Leaves heart-shaped, undivided, serrated: calyx teeth tapering to a point.

Kniph. 6–*Blackw.* 136–*E. bot.* 46–*Fuchs.* 154–*J. B.* iii. 318. 1–*Riv. mon.* 65. 1, *Marrubiastr.*–*Matth.* 825–*Clus.* ii. 34. 1–*Dod.* 90. 1–*Lob. obs.* 279. 1, *and ic.* i. 518. 2–*Ger. em.* 701. 1–*Park.* 1230. 3–*H. ox.* xi. 9. 14–*Pet.* 32. 4.

Lower leaves heart-shaped, upper ones egg-shaped. Floral leaves bristle-shaped, hairy. *Whirls* extending half way round the stem. *Calyx* hairy, rim 5-cornered; teeth ending in sharp bristle-shaped points. *Bloss. tube* containing honey, closed above by 5 hairy tufts; *upper lip* hairy, not very entire, purple, variegated with white lines. The cups attaining their full size long before the blossoms expand, the latter appear as if already fallen off, though, on examination, they will be found at the bottom of the cup.

Stinking Horehound, or Henbit. On rubbish and in hedges, common. P. July, Aug.*

Var. 2. Blosssoms white, with a tinge of red. Not the B. alba of Linn. as Mr. Hudson supposed.

* It stands recommended in hysterical cases. The Swedes reckon it almost a universal remedy in the diseases of their cattle. Horses, cows, sheep, and goats refuse it.

[Near Hammersmith, on the road side. WOODWARD. Norwich. Mr. CROWE, and Stafford. Sr.]

MARRU'BIUM. *Calyx* salver-shaped, rigid, with 10 scores: *bloss.* upper lip cloven, strap-shaped, straight.

M. Teeth of the calyx bristle-shaped, hooked. vulga're.

E. bot. 410–*Fl. dan.* 1036–*Ludw.* 145–*Riv. mon.* 66. 1, *Marrubium alb.*–*Blackw.* 479–*Ger.* 561. 1–*Fuchs.* 590–*J. B.* iii. 316–*Matth.* 828–*Lonic.* i. 110. 2–*Trag.* 8. 2–*Clus.* ii. 34. 1–*Dod.* 87. 1–*Lob. obs.* 278. 3, *and ic.* i. 517. 2–*Ger. em.* 693. 1–*Park.* 44–*Pet.* 32. 3–*H. ox.* xi. 9. *row* 3. 1.

Whole *plant* white with down. *Lower-leaves* roundish, wrinkled, with thick veins beneath; *upper-leaves* somewhat egg shaped. Mr. WOODWARD. *Leaves* wrinkled, hoary. *Calyx* woolly, fringed on the inside at the bottom of the teeth with woolly hairs. *Bloss.* compressed, bowed; upper lip spear-shaped; lower lip, middle segment slightly scolloped, lateral segments spear-shaped; short. *Anthers* with a black substance in the middle. *Bloss.* white.

White Horehound. Road sides and amongst rubbish.

P. July—Sept.*

LEONU'RUS. *Anthers* sprinkled with shining particles.

L. Stem-leaves spear-shaped, 3-lobed. Cardi'aca.

Kniph. 4–*Ludw.* 5–*Fl. dan.* 727–*Riv. mon.* 20. 1, *Cardiaca.*–*Blackw.* 171–*E. bot.* 286–*Dod.* 94–*Lob. obs.* 278. 1, *and ic.* i. 516. 1–*Ger. em.* 705–*Park.* 42. 7–*Ger.* 569–*Fuchs.* 395–*Lonic.* i. 110. 3–*H. ox.* xi. 9. 18.

Flowers in whirls, purplish within, white on the outside, *Anthers* brown, partly covered on the outer side with white opaque globules which look like enamel, but are not of a bony hardness.

* It is very bitter to the taste, and not altogether unpleasant to the smell. It was a favourite medicine with the ancients in obstructions of the viscera. In large doses it loosens the belly. It is a principal ingredient in the Negro Cæsar's remedy for vegetable poisons A young man, who had occasion to take mercurial medicines, was thrown into a salivation, which continued for more than a year. Every method that was tried to remove it, rather increased the complaint. At length Linnæus prescribed an infusion of this plant, and the patient got well in a short time. Horses, cows, sheep, and goats refuse it.

Common Motherwort. Hedges, and on rubbish and dunghills. [Ditchingham, Norfolk, in a hedge, and on an adjoining bank, in a gravelly soil. Mr. WOODWARD.] B. LINN. and HUDS. P. RELH.] June—Aug.*

CLINOPO'DIUM. *Stamens* crooked; *anthers* approaching: *involucr.* bristle-shaped, beneath the whirls.

vulga're. C. Heads roundish, hispid: floral-leaves bristle-shaped.

Fl. dan. 930–*Kniph.* 11–*Clus.* i. 354. 2–*Lob. obs.* 269. 2–*ic.* i. 504. 2–*Ger. em.* 675. 2–*Park.* 22. 4–*H. ox.* xi. 8. *row* 1. 1–*Pet.* 32. 9–*Riv. mon.* 43. 1, *Clinopodium*–*Trag.* 36. 2–*Lonic.* i. 118. 1–*Matth.* 814–*Lonic.* ii. 21. 1.

Leaves heart-egg-shaped, scolloped, on leaf-stalks. *Bloss.* tube long; *upper lip* nicked, the lower scolloped. RELH. Whole *plant* hairy. *Heads* exceedingly hairy. *Calyx* with 13 scores. Mr. HOLLEF. *Stems* square, hairy, reddish. *Leaves* egg-shaped, serrated, sometimes nearly entire, on short leaf-stalks. *Flowers* many on one branched fruit-stalk. *Bloss.* bright purplish red. WOODWARD.

Round-headed Basilweed. Wild Basil. Meadows, hedges, and dry pastures, especially in a calcareous soil. [Plentiful about Clapham in Yorkshire. Mr. CALEY.] P. July.

ORIG'ANUM, Flowers forming a 4-sided spike-like cone.

vulga're. O. Spikes roundish, panicled, clustered: floral-leaves egg-shaped, longer than the calyx.

Kniph. 4–*Ludw.* 90–*Curt.* 338–*Woodv.* 164–*Riv. mon.* 60. 1, *Origanum.*–*Ger.* 541. 4–*Matth.* 1701–*Dod.* 285. 2–*Lob. obs.* 263. 1, *and ic.* i. 492. 2–*Ger. em.* 666. 4–*Park.* 12. 6–*H. ox.* xi. 3. 12–*Pet.* 34. 8–*Blackw.* 280–*Fuchs.* 552–*J. B.* iii. 236–*Trag.* 36. 1–*Lonic.* i. 118. 2–*Fl. dan.* 638.

Stem a little woolly, often coloured. *Leaves* egg-heart-shaped, very slightly serrated, opposite, dotted, more or less hairy. *Floral-leaves* spear-shaped, coloured. *Calyx* nearly equal; mouth closed with bristly hairs, which at first lie parallel to the sides, but when the blossom falls off they stand out closing

* The leaves have a strong, but not an agreeable smell, and a bitter taste. Goats, sheep, and horses eat it. Cows are not fond of it. Swine refuse it.

up to the mouth; without beset with short fine hairs, and minute white shining globules. *Bloss.* pale red, hairy; the middle segment rather longer than the rest. *Stamens* as long, or longer than the blossom, but in some specimens they are shorter, and then the anthers appear to be destitute of pollen.

Var. 2. Leaves egg-spear-shaped.

Lob. obs. 264. 2–*ic.* i. 494. 2–*Ger. em.* 664. 2–*Park.* 12. 4–*H. ox.* xi. 3. 9.

This is commonly cultivated in our gardens, and has been supposed to be the O. *Onites* of Linnæus.

Winter Marjoram.

Wild or *Field Marjoram.* Thickets and hedges, in a calcareous soil. [Catton, near Norwich. Mr. Woodward. In a wood near Cartmel Wells. Mr. Atkinson. Clapham, Yorkshire. Mr. Caley.] P. July.*

THY'MUS. *Calyx* 2-lipped; mouth closed with soft hairs.

T. Flowers in heads: stems creeping: leaves flat, blunt, serpyl'lum. fringed at the base.

Fl. dan. 1164–*Kniph.* 6–*Ludw.* 121–*Vaill.* 32. 9, *and* 7–*Curt.*–*Clus.* i. 359. 1–*Dod.* 277. 1–*Lob. obs.* 230. 2, *and ic.* i. 423. 2–*Ger. em.* 570. 1–*Park* 8. 10–*Pet.* 31. 1–*H. ox.* xi. 17, *row* 1. 1–*Fuchs.* 251–*J. B.* iii. 269–*Blackw.* 418–*Matth.* 725–*Riv. mon.* 42. 2, *Serpyll. ft. minore.*–*Ger.* 455. 1, *and* 2–*Lonic.* i. 119. 1.

Calyx teeth fringed. *Stamens* as long as the blossom. Linn. *Filaments* those inserted below the upper lip shorter than the tube, those below the under lip longer than the tube. Mr. Hollefear. *Stems* woody, nearly cylindrical. *Leaves* oblong-egg-shaped, very entire, with hollow dots on both surfaces, fringed at the base with a few fine white hairs. *Calyx* coloured with a circle of white hairs running round the inside at the base of the segments, which, while the plant is in flower, lye flat to the sides of the calyx, but when the blossom falls off expanding close up its mouth. *Bloss.* purplish red.

* The whole plant is a warm aromatic. The dried leaves, used instead of tea, are exceedingly grateful; the essential oil of this plant is so acrid, that it may be considered as a caustic, and is much used with that intention by farriers. A little cotton wool moistened with it, and put into the hollow of an aching tooth, frequently relieves the pain. The country people use the tops to dye purple. Goats and sheep eat it. Horses are not fond of it. Cows refuse it.

Mother of Thyme. Wild Thyme. Common Thyme. Heaths and mountainous places. P. July, Aug.*

It is subject to considerable variations, the principal of which are:

Var. 2. *white flowered.* Huds. Blossoms white.

Vaill. 32. 8–*Riv. mon.* 42. 3, *Serpyllum.*–*Pet.* 31. 2.

Serpyli vulgaris secundum genus. R. Syn. 230–*Serpyll. vulg. flore amplo.* Vaill.

Var. 4. *broad-leaved.* Linn. Larger. Leaves broad.

Ger. 456. 3–*Lob. ic.* i. 424. 1–*Ger. em.* 573. 7–*Park.* 7.7 –*Pet.* 31. 3–*Ger. em.* 570. 3.

Okey Hole, Somersetshire.

Serpyllum vulgare majus. R. Syn. 231.

Var. 5. *Lemon.* Leaves with the scent of lemon peel.

Clus. i. 359. 2–*Dod.* 277. 2–*Ger. em.* 571. 7–*Park.* 8. 9– *J. B.* 270. 1–*Ger.* 458. 2–*Pet.* 31. 4.

It is used in sauces.

Var. 6. *smooth.* Leaves narrow, smooth.

Sheldr. 52–*Woodv.* 110.

Boxly Hill, by Kitt's Coffee-house.

Var. 7. *hoary.* Differs from 1 in the hairiness of the leaves. Ray.

Vaill. 32. 6–*Riv. mon.* 42. 1, *Serp. mont. hirsut.*

Gogmagog Hills, and other barren places.

Var. 8. *shrubby.* More shrubby. Hairy. Blossoms pale red. Ray.

Pastures on the summit of y Wydhva, Caernarvonshire, and on Snowdon.

Var. 9. *scentless.* Sr. Hairy, small, creeping, scentless. Pluk.

Serpyll. hirsut. min. rep. inodorum. R. Syn. 231.

Ireland.

† The whole plant is fragrant, and yields an essential oil that is very heating. An infusion of the leaves removes the head-ach occasioned by the debauch of the preceding evening. A general opinion prevails, that the flesh of sheep, that feed upon aromatic plants, particularly upon Thyme, is much superior in flavour to common mutton; but Mr. Bowles, the ingenious author of the account of the Sheep-walks in Spain, (*Gent. Mag.* 1764,) considers this as a vulgar error. He says, sheep are not fond of aromatic plants; that they will carefully push aside the Thyme to get at the grass growing beneath it; and that they never touch it, unless when walking apace, and then they will catch at any thing. The attachment of bees to this and other aromatic plants is well known. Sheep and goats eat it. Swine refuse it. The *Phalæna papilionaria* lives upon it.

T. Flowers in whirls, 1 upon each fruit-stalk: stems up- A'cinos.
right, somewhat branched: leaves acute, serrated.

Dicks. h. s.–Curt.–E. bot. 411–*Kniph.* 8–*Riv. mon.* 43. 2, *Acinos–Clus.* i. 354. 1–*Dod.* 280–*Lob. obs.* 270. 2, *and ic.* i. 506. 1–*Ger. em.* 675. 1–*Park.* 21. 1–*H. ox.* xi. 18, *row* 1. 1–*Pet.* 32. 10–*Fuchs.* 896–*J. B.* iii. 259–*Lonic.* i. 116. 3–*Fl. dan.* 814–*Trag.* 37–*Ger.* 548. 1–*Matth.* 815.

Stems ascending. *Leaves* in distant pairs. Mr. WOODWARD. *Plant* hairy. *Calyx* scored, at the fore part at the base inflated, about the middle contracted, and then dilating into the lower lip. Mr. HOLLEFEAR. The middle segment of the lower lip of the blossom notched at the end. *Blossoms* purple.

Wild Basil. Basil Thyme. Dry hills, and on chalk and gravel. [Not unfrequent in Norfolk. Mr. WOODWARD. and Surry. ST. On the side of Hamilton, Yorkshire. Mr. ROBSON. Wick Clifts. Mr. SWAYNE. St. Vincent's Rocks.] A. June—Aug.

MELIS'SA. *Calyx* dry, angular, the upper lip expanding and reflected: *bloss.* upper lip somewhat vaulted, cloven; lower lip, the middle segment heart-shaped.

M. Fruit-stalks axillary, forked, longer than the leaves; stem ascending, hairy. Nep'eta.

Riv. mon. 47, *Calamentha fol. incano–Gies.* 1. 14–*Curt.–Blackw.* 167–*Matth.* 617–*Dod.* 98. 2–*Lob. obs.* 275. 1, *and ic.* i. 513. 2–*Ger. em.* 687. 3–*Park.* 37. 4. *a.*

Fruit-stalks much longer than the leaves; their branches again forked, the last generally bearing 3 flowers, the 2 outer of which have a pair of floral-leaves, the middle one naked. *Floral-leaves* very small, 1 pair at each division of the fruit-stalks. *Flowers* very small. WOODWARD. *Leaves* in opposite pairs, nearly sitting, egg-shaped. *Fruit-stalks*, the forks subdivided with 3 to 6 fruit-stalks, each supporting a flower. *Calyx* coloured, ribbed, beset on the outside with short hairs and shining glands, smooth within, but closed at the mouth with long hairs; the 3 upper teeth equal, the 2 lower rather longer, equal, and more pointed, ribs 15. *Bloss.* pale bluish purple; *lower lip* beset at the base with white club-shaped bristles; lateral segments egg-shaped, the middle one kidney-shaped, toothed.

The want of the labiated shape of the calyx, its nearly equal teeth, and the broad, scolloped middle segment of the lower lip of the blossom, cannot fail to direct the learner to the genus NEPETA, to which it really seems to belong. In a garden the leaves become six times as large as in its natural soil, but the

flowers are not larger, and the fruit-stalks are shorter than the leaves.

Field Baum. Sides of roads and cornfields, and hedge banks. [Norfolk, frequent. Mr. WOODWARD.] P. Aug.

The *Cassida viridis* feeds upon it.

Calamin'tha. M. Fruit-stalks axillary, forked, as long as the leaves.

Kniph. 4–*Ludw.* 33–*Riv. mon.* 46. 2, *Calamentha–Dod.* 98. 1–*Lob. obs.* 274. 2, *and ic.* i. 513. 1–*Ger. em.* 687. 3–*Park.* 36–*H. ox.* xi. 21. *row* 2. 3–*Pet.* 34. 1–*Blackw.* 166–*Matth.* 716–*Ger.* 552. 1.

Fruit-stalks generally shorter than the leaves, sometimes as long as, and near the ends of the branches longer. WOODWARD. *Leaves* in opposite pairs on leaf-stalks. *Fruit-stalks* 3-forked, the lateral arms forked. *Calyx* with 13 ribs, short hair, and shining globules; segments fringed, and the mouth closed with long hairs; teeth pointing upwards after the blossom falls off, the 3 upper equal, the 2 lower longer, and more pointed. *Bloss.* tube beset within with white club-shaped hairs; *upper lip* lilac-coloured within; *lower lip* pale within, but marked with 3 round dots, and a few short streaks of a deeper hue. *Summit,* 1 segment greatly longer than the other, and hooked.

Calamint. Baum. Sides of roads and cornfields. [Dudley Castle. Near Tamworth Castle. Banks of the Avon, near Bristol.] P. June—Aug.

MELITTIS. *Calyx* wider than the tube of the blossom: *bloss.* upper lip upright, entire; lower lip 3-cleft: *anthers* each pair forming a cross.

Melisso-phyl'lum. M. Calyx three-lobed. E. bot.

E. bot. 577–*Jacq. austr.* 26–*Kniph.* 6–*Riv. mon.* 21–*Melissophyllum–Lob. obs.* 277. 2. *and ic.* i. 515. 1–*Ger. em.* 690. 3. *f.* 1–*Park.* 41. 4–*Fuchs.* 498–*J. B.* iii. 233. 2. –*Trag.* 12–*Clus.* ii. 37. 2–*Cam. hort.* 30–*J. B. ib.* 1.

Calyx upright, 3-cleft; the upper segment often marked with a small tooth on each side. *Blossom* white; *tube* twice as long as the calyx; *border* with 4 divisions, expanding, consisting of an *upper lip* roundish, upright, entire; and a *lower lip* with 3 clefts, the middlemost larger, flat, entire, purple. *Anthers* yellow, shorter than the blossom. LINN. *Stem* somewhat square, scored, hairy. *Calyx* hairy below, nearly smooth above, large, veined and tipped with purple. WOODWARD. Whole *plant* hairy. *Leaves* opposite, egg-spear-shaped, wrinkled, serrated, the teeth

terminating in purplish glands. *Fruit-stalks* from the bosom of the leaves, 2 or 3 together, not expanding altogether. *Calyx*, border on the upper side turned outwards like a spout, with a spear-shaped segment on each side, the lower lip cut off and finely serrated. *Bloss.* white, stained with purple, except the middle segment of the lower lip, which is a full purple edged with white. *Anthers* of the shorter stamens lying close to each other in form of a cross.

Bastard Balm, or *Baum-leaf.* Hedges and woods in the West of England. About Totness, Devonshire; Haverford-west, Pembrokeshire; New Forest, Hants. [Road side between Leskard and Callington, Cornwall.] P. May—June.

M. Calyx four-lobed. E. bot. grandiflo'ra.

E. bot. 636–*Curt.*–*Mill. ill.*–*Ger. em.* 690. 3. *f.* 2.

On the authority of Dr. Smith in the English Botany, we cannot hesitate to insert this new species of Melittis, there first distinctly separated from the M. Melissophyllum. It is one of the most beautiful of the plants natural to this island, and has been lately found by Mr. D. Turner and Mr. Sowerby, in great plenty about a mile from Ashburton in the road towards Plymouth, and also in Cornwall.—Dr. Smith observes the calyx is 4-lobed, having on each side two lateral, not vertical lobes, sometimes notched, but more generally entire. The blossom is larger than in the more common species, white, with a pale tinge of yellow on the upper side, the lower lip marked with a large undivided purple spot, surrounded by a white margin.

[Cornwall and Devonshire, where it is admitted into gardens. My specimens gathered near Callington, in May 1794, appear to be this species, and not the Melissophyllum as at that time supposed.] P. May, June.

SCUTELLA'RIA. *Calyx*, rim nearly entire, closed after flowering; covered with a lid.

S. Leaves heart-spear-shaped, scolloped: flowers axillary. galericula'ta.

Curt. 155–*E. bot.* 523–*Kniph.* 8–*Riv. mon.* 77. 1, *Scutellaria*–*Blackw.* 516–*Walc.*–*Fl. dan.* 637–*H. ox.* xi. 20. *row* 3. 6–*Lob. obs.* 186. 3. *and ic.* i. 344. 2–*Dod.* 93. 2–*Ger. em.* 477. 10–*Park.* 221–*Pet.* 34. 10.

Stem nearly smooth. *Leaves* nearly smooth, scolloped at the base, entire upwards. *Flowers* hairy on the outside. Woodw. *Plant* much branched, about ½ a yard high. *Bloss.* blue. *Anthers* purple.

Hooded Willowherb. Blue Skullcap. Banks of rivers and edges of ponds. [Side of the stews at Edgbaston.] P. Aug.*

mi'nor. S. Leaves heart-egg-shaped, nearly entire: flowers axillary.

Disks. h. s.–Curt. 283–*E. bot.* 524–*Ger. em.* 581. 3–*Park.* 220. 4–*H. ox.* xi. 20. *row* 3. 8–*Pet.* 34. 11–*Ger.* 466. 2.

Very small and slender. *Leaves* egg-shaped, with only 1 or 2 scollops at the base. WOODWARD. Plant from 4 to 8 inches high, generally unbranched. *Leaves* sometimes egg-spear-shaped, a little serrated towards the base, slightly hairy. *Calyx* with 2 lips, but very slightly cloven; *upper lip* with a flat ridge running across it, which, when the blossom falls, enlarges and pressing down the upper lip, closes the mouth of the calyx, giving it the appearance of a helmet; middle segment rather shorter, nearly flat; *lower lip* broad, rather reflected, but neither notched at the end nor keeled beneath. *Bloss.* reddish purple, the lower lip mottled within with deeper coloured spots. *Anthers* white. *Summit* slightly cloven.

Lesser Skullcap. Boggy ground and edges of ponds. [Hampstead heath, where Gerard mentions to have found it. Mr. AIKIN. Lewesdon hill. Mr. BAKER. In Goldmire near Dalton. Mr. ATKINSON. Seaman's Moss, on the part next to Altringham, Cheshire. Mr. CALEY. In Bagot's Park, and on Norton Bog, Staffordsh. Hon. Mr. BAGOT. Needwood Forest, Staffordsh.] P. July, August.

PRUNEL'LA. *Filaments* forked, one of the divisions bearing the anthers: *summit* cloven.

vulga'ris. P. All the leaves egg-oblong, serrated, on leaf-stalks: upper lip of the calyx lopped, 3-toothed.

Curt. 229–*Ludw.* 19–*Kniph.* 5–*Fl. dan.* 910–*Blackw.* 24–*Mill.* 69. 2–*Dod.* 136. 1–*Lob. obs.* 251. 3. *and ic.* i. 474. 2–*Ger. em.* 632. 1–*Park.* 1680. 1–*H. ox.* xi. 5. *row* 1. 1. *f.* 4–*Pet.* 32. 11–*Walc.*–*Riv. mon.* 29. 1, *Brunella*–*Ger.* 507. 1–*Fuchs.* 621–*J. B.* iii. 428. 2–*Trag.* 310–*Matth.* 963.

* When the blossom falls off the cup closes upon the seeds, which, when ripe, being still smaller than the cup, could not possibly open its mouth, or overcome its elastic force, as the down of the seeds do in the compound flowers, and must consequently remain useless without a possibility of escaping. But nature, ever full of resources, finds a method to discharge them. The cup grows dry, and then divides into 2 distinct parts; so that the seeds, already detached from the receptacle, fall to the ground. Cows, goats, and sheep eat it: horses and swine refuse it.

In open sunny situations it grows trailing, and not above a finger's length, but in woods it is upright, and near a foot high. LINN. Whole *plant* thinly set with hairs. *Leaves* opposite. *Floral-leaves* heart-shaped, ribbed, edged with purple and fringed. *Calyx, upper lip* with 7 ribs; *lower lip* with 2 spear-shaped segments, each marked with 3 lines, and serrated with short stiff hairs. *Bloss. upper lip* slightly notched at the end: *lower lip*, middle segment jagged. *Summit*, segments rolled back. *Bloss.* blue, purplish, or white.

Common Selfheal. Meadows and pastures. P. Aug.

ANGIOSPERMIA.

BART'SIA. *Calyx* 2-lobed, notched at the end, the points (sometimes) coloured: *bloss.* (sometimes) less coloured than the calyx; the upper lip longer: *capsule* 2-celled.

B. Upper leaves alternate, serrated: flowers distant, lateral. visco'sa.

Lightf. 14. *at p.* 321–*Ger.* 85–*Pluk.* 27. 5–*Pet.* 36. 6–*Barr.* 665.

Stem cylindrical, simple. *Leaves* sitting, spear-shaped, sharply serrated, slightly hairy. *Flowers* single, from the bosom of the leaves, on short fruit-stalks. *Calyx* very large, as long as the blossom, with 5 deep divisions; segments spear-shaped, clammy. *Blossoms* yellow. WOODW. *Stems* sometimes branched from the bottom upwards, nearly to the middle. *Calyx* with 4 nearly equal segments, rarely with 5. I have never seen it coloured. *Filaments* rolled in a spiral under the upper lip of the blossom. *Anthers* pointed at bottom. Miss GIDDY.—MR. STACKHOUSE also observes that the calyx is not coloured.

Marsh painted-cup. Marshes in Cornwall and Devonshire; about Latham, near Ormskirk, Lancashire; and about Ardencaple in the vicinity of Loch Gyle, near Loch Long, in the district of Cowal, Argyleshire. [Cornfields, near Plengwarry, and Cosgarne, Cornwall. Mr. WATT.] A. July, Aug.

B. Leaves opposite, heart-shaped, bluntly serrated. alpi'na.

Dicks. h. s.–E. bot. 361–*Fl. dan.* 43–*Pluk.* 163. 5–*Pon. in Clus.* ii. 343.

Leaves heart-spear-shaped. *Flowers* in a short terminating spike. Mr. WOODWARD. *Blossoms* in leafy spikes, purple.

Mountain Painted Cup. Banks of rivers in rough sunny places. By a rivulet near Orton, in crossing the road to Crosby, Westmoreland, RAY, HUDS. P. Sept.

Odonti'tes. B. Upper leaves alternate, spear-shaped, serrated: flowers in bunches, pointing one way. Huds. See Euphrasia *Odontites*.

It differs from Euphrasia *officinalis* in the segments of the lower lip of the blossom not being entire, it agrees in the structure of the calyx, and the hairs of the anthers, in both which circumstances it differs from the *Bartsia*. St. Mr. Afzelius observed to me, that this agrees in generic character with the Bartsia alpina, but that the latter has not the character of the other Bartsias; he therefore would constitute a new genus to contain these two plants.

RHINAN'THUS. *Calyx* 4-cleft, inflated: *capsule* 2-celled, blunt, compressed; *seeds* few.

Cris'ta gal'li. R. Upper lip of the blossom compressed, and shorter: calyx smooth.

Curt. 320–*E. bot.* 657–*Kniph.* 12–*Fl. dan.* 981–*Riv. mon.* 92. 2, *Crista galli*–*Dod.* 556. 1–*Lob. obs.* 285. 2, *and ic.* i. 529. 2–*Ger. em.* 1071. 1–*Park.* 713. 2–*H. ox.* xi. 23, *row* 2. 1–*Pet.* 36. 2–*Walc.*–*J. B.* iii. 436. 3–*Ger.* 912.

Calyx equal, 4-cleft. *Capsule* bordered at the edge. *Seeds* inclosed by a loose membrane. Linn. *Stems* nearly 4-cornered, with dark purple stains. *Leaves* in pairs, opposite, sitting, spear-shaped, serrated, above dark green and rough, beneath grey with a curious network of green veins. *Bloss.* yellow; upper lip tipped with a dirty blue. *Germens* surrounded at the base by a membranaceous nectary, and in the front a short, thick crooked horn-shaped gland. The seeds when ripe rattle in the capsule, whence its English name.

Yellow Rattle. Penny-grass. Coxcomb. Cockscomb. Meadows, pastures, and woods. A. June, July.

Var. 2. Linn.—Blossoms smaller; lower lip purple. Cornfields between Wetherby and Catall, and near Burrowbridge, Yorkshire, and W. Newton, Northumberland. Ray.

EUPHRA'SIA. *Cal.* 4-cleft, cylindrical: *anthers*, the lower ones with one thorny lobe at the base: *caps.* 2-celled, egg-oblong: seeds few, leaning backwards.

officina'lis. E. Leaves egg-shaped, streaked, sharply toothed.

Curt. 335–*Fl. dan.* 1037–*Woodv.* 220–*Sheldr.* 48–*Kniph.* 8–*Walc.*–*Ludw.* 135–*Riv. mon.* 90. 1, *Euphrasia*–*H. ox.*

xi. 24. 1. *b.–Matth.* 1022–*Ger.* 537. 1–*Dod.* 54. 3–*Lob. obs.* 261. 1, *and ic.* i. 491. 1–*Ger. em.* 663–*Park.* 1329. 1–*H. ox.* xi. 24. 1. *a–Fuchs.* 247–*Trag.* 238–*J. B.* iii. 432. 3–*Blackw.* 427.

The lower lobes of the lower anthers terminate in a thorn which bends the filament to one side. LINN. *Stems* reddish. *Branches* in opposite pairs. *Leaves* sitting, mostly opposite. *Calyx* with 5 flat sides and 5 corners, but segments rarely 5, unequal, spear-shaped, dark purple at the ends, and with a few dark purple globular glands strewed on the outside. *Bloss. tube* rather crooked, a little hairy, stained with yellow; *upper lip* streaked with a few purple lines, cloven into 2, segments ending in 3 teeth; *lower lip*, segments cloven at the end, with a very small tooth in the cleft, the lateral segments with 3 purple lines, the middle one with a yellow blotch. *Anthers* brown, with a few white hairs on the lower part where they open. *Summit* fringed with very minute glands round the edge. *Seed-vessel* slightly notched at the end, a little hairy towards the top, and marked with black dots. *Seeds* egg-shaped. *Blossoms* bluish white, with purple streaks.

Common Eyebright. Heaths; dry barren meadows and pastures. A. July—Sept. [But, on Arthur's Seat, near Edinburgh, I have found it in blossom in the beginning of May, in great plenty, but with stems from ½ to 1½ inch high, and the leaves bluntly serrated. ST.]*

E. Leaves strap-shaped, all serrated. Odonti'tes.

Curt.–Kniph. 12–*Fl. dan.* 625–*Riv. mon.* 90. 2, *Odontites*–*Dod.* 55–*Lob. obs.* 261. 2, *and ic.* i. 496. 2–*Ger. em.* 91. 2–*Park.* 1329. 3–*H. ox.* xi. 24. 10–*Pet.* 36. 4–*Ger.* 85.

Stem bluntly four-cornered, rough. *Branches* in opposite pairs. *Leaves* sitting, opposite, rough; spear, or strap-spear-shaped. *Flowers* pointing one way, forming long, terminating, leafy bunches. *Calyx* hairy without. *Bloss.* hairy; *upper lip* slightly notched at the end; *lower lip*, middle segment slightly indented at the end. *Filaments* flatted. The lobes of all the anthers ending at the base in a short taper point, and between the lobes are a number of white club-shaped substances. *Germen* compressed, hairy, surrounded and sheathed at the base by a skinny membrane. *Summit* knobbed. *Leaves* sometimes reddish. *Blossoms* dusky red, or purple.

Red Eyebright.

* It is a weak astringent, and was formerly in repute as a remedy for impaired vision. It will not grow but when surrounded by plants taller than itself. Cows, horses, goats, and sheep eat it. Swine refuse it.

Var. 2. Flowers white. Stem very light green. Leaves without the least tinge of red.

Sent to me by Mr. Bourne, who gathered it on Northington Farm, Grimley, near Worcester. Cornfields and pastures.

A. July—Sept.

MELAMPY'RUM. *Cal.* 4-cleft : *bloss.* upper lip compressed, edges bent back : *caps.* 2-celled, compressed, slanting, opening on one side : *seeds* solitary, bulging.

crista'tum. M. Spikes quadrangular : floral-leaves heart-shaped, compact, finely toothed, tiled.

E. bot. 41–*Fl. dan.* 1104–*Kniph.* 11–*Riv. mon.* 81. 1, *M. cristatum–Pluk.* 99. 2–*J. B.* iii. 440. 2–*H. ox.* xi. 23. 2.

Floral-leaves, the upper coloured ; the lower spear-shaped. *Bloss.* helmet purplish, or white, with a yellow edge. Relh.—Whole *plant* nearly smooth, very much branched. *Stems* in the autumn $1\frac{1}{2}$ or 2 feet high. *Branches* opposite, numerous, diverging, so that where numbers grow together they are so entangled that it is almost impossible to extricate them. *Leaves* opposite, sitting, strap-shaped but taper-pointed, those below the branches bent down, on the branches parallel. *Spikes* terminating the stem and branches. *Floral-leaves* purplish, large, the middle tooth lengthened out into a long awl-shaped point bent down, very long at the bottom of the spike, shorter upwards, but all more or less so ; sides doubled together, closely pressed together at the edges, forming a square head with hollow sides, having the horns at the angles. *Bloss.* reddish ; I have never observed them yellow, though I have seen thousands of them. Mr. Woodw.

Crested Cow-wheat. Woods of Cambridgeshire and Bedfordshire, plentifully ; and among corn at Waltingfield, near Wakefield. [Ripton Wood, Huntingdonshire. Mr. Woodward.]

A. June, July.

arven'se. M. Spikes conical, loose : floral-leaves with bristle-shaped teeth, coloured.

Fl. dan. 911–*E. bot.* 53–*Riv. mon.* 80, *M. arvense.–Kniph.* 1–*Clus.* ii. 45. 1–*Ger. em.* 90. 3–*J. B.* iii. 439. 2–*H. ox.* xi. 23. *row* 1. 1–*Dod.* 541. 2–*Lob. obs.* 23. 1, *and ic.* i. 37, *Trit. vacc.–Ger. em.* 90. 1–*Park.* 1327. 4–*Trag.* 663.

Stem upright, slightly hairy, branched. *Leaves* opposite, spear-shaped, lengthened out into a very long point, near sitting, slightly downy. *Flowers* in an oval head. *Floral-leaves* long,

spear-shaped, wing-cleft, with teeth at the base, entire upwards. Woodward. *Bloss.* yellow and dusky purple.

Purple Cow-wheat. Cornfields. Near Lycham, Norfolk; Horsley Bath, near Beeston Castle, Cheshire. Between Norwich and Cossey. [Costesey, near Norwich. Mr. Crowe. Bixley, near Norwich. Mr. Woodward.] A. July.*

M. Flowers lateral, pointing one way: leaves in distant praten'se. pairs: blossoms closed.

E. bot. 113–*Kniph.* 11–*Walc. M. sylvaticum–Ger.* 84. 1 *and* 2–*Clus.* ii. 44. 2–*Lob. obs.* 22. 2, *ic.* i. 36. 2–*Ger. em.* 91. 1–*Park.* 1326. 1–*H. ox.* xi. 23. 3.

Lower lip of the blossom straight, not bent downwards, as in *M. sylvaticum.* St. Mouth closed, not gaping as in *M. sylvat.* Linn. Whole *plant* frequently brownish, beginning to flower early and continuing to flower all the summer, growing more and more branched, in the manner of *M. cristatum*, and in the latter part of the year extremely branched. *Branches* weak, opposite. *Leaves* on very short leaf-stalks, stiffish, from the bosom of the lower ones an egg-shaped gland, possibly an abortive flower, those towards the base of the branches strap-spear-shaped, the upper spear-shaped, taper-pointed, dark blackish green, with sometimes a tinge of purple. Only the *floral-leaves* toothed, so that early in the spring very few will be visible, but later they are very numerous, the branches extending in length and continuing to flower till the spike is very long; the *lower* halberd-shaped, with only 2 or 3 teeth at the base; the *upper* nearly with winged clefts at the base, with long awl-shaped reflected teeth, and ending in an acute spear-shaped point. *Bloss. tube* somewhat furrowed, straight, white at the base, forwards faintly tinged with yellow; *lips* closely approaching, hairy within; *upper lip* slightly cloven; the *lower* with 3 shallow clefts. *Anthers* the back pair firmly adhering together. Mr. Woodward. *Leaves* spear-shaped, greatly tapering towards the point, all serrated, but the serratures extremely fine, and the edges of the leaves being rather turned back, they are not very readily seen. *Stem* feeble, cylindrical towards the bottom, 4-cornered upwards. *Calyx* purplish without; *segments* with minute stiff bristles along the edge; the 2 *upper* longer. *Bloss.* of a full yellow, very much compressed; the notch in the upper lip but barely perceptible; *lower lip* with 2 orange-coloured rising plaits; *tube* straw-coloured. *Filaments* 4, supporting what appears a single anther, which is egg-shaped, compressed, hairy at the edges, and open-

* The seeds, when ground with corn, give a bitterness and greyish cast to the bread, but do not make it unwholesome. Cows and goats eat it. Sheep refuse it.

ing at the front edge, divisible into 4 portions, but as readily breaking in any other direction ; after flowering separating into 2 or 4 parts. *Style* corresponding to the bend of the upper lip of the blossom, rising over the anther, and presenting its *summit* to the opening, whence the pollen escapes. *Seed-vessel* a yellow glandular substance at the base on the fore part, doubled down, and so brittle as not to admit being straightened. The teeth at the base of the leaves, particularly of the leaves next to the flowers, sufficiently distinguish this from the M. sylvaticum, in which all the leaves are entire. The lower lip of the blossom in M. sylvaticum is turned downwards and outwards, but in M. pratense it turns upwards and inwards.

Meadow Cow-wheat.

Var. 2. Blossom white, with 2 yellow spots on the lower lip. Ray.

Woods and thickets, in soil that holds the wet, not uncommon. [Frequent in woods and hedges in a clayey soil in Norfolk and Suffolk. Woodw. In woods near the road from Birmingham to Hales Owen. Woods at Edgbaston.] A. July, Aug.*

This has frequently been mistaken for the M. sylvaticum, probably because it generally grows in woods or on the skirts of woods ; but this is not the only instance in which too much attention to a trivial name has been the occasion of error.

sylvat'icum. M. Flowers lateral, pointing one way: leaves in distant pairs : blossoms widely gaping.

E. bot. 804—*Fl. dan.* 145—*Kniph.* 9.

Differs from M. pratense as follows : *Stem* more nodding. *Leaves* fully expanding. *Bloss.* only half as long, entirely yellow, and not *with the tube white* ; mouth or the opening between the lips gaping and open. Linn. But the M. pratense has sometimes the whole of the blossom yellow, so that the circumstance of colour must not be too much trusted in distinguishing the two species. *Stem* upright, or nodding, weak, branched, leafy. *Leaves* very entire, all of them undivided, very long, spear-shaped.

Yellow Cow-wheat. Woods and shady places. Huds. In the way from Taymouth to Lord Breadalbane's cascade, and about Finlarig at the head of Loch-Tay. Not common. A much rarer plant than *M. pratense.* Lightf. [Wick Clifts. Mr. Swayne.] A. June—Aug.†

* Where this plant abounds, the butter is yellow, and uncommonly good. Swine are very fond of the seeds. Sheep and goats eat it. Cows are very fond of it. Horses and swine refuse it.

† Cows, sheep, and goats eat it ; and with a plentiful allowance of it soon grow fat.

LATHRÆ'A. *Calyx* with 4 or 5 divisions: *germen* with a depressed gland at the base of the seam: *caps.* 1-celled; receptacles lateral, sponge-like.

L. Stem undivided: flowers pendent; lower lip 3-cleft. Squama'ria.

Dicks. h. s.–*E. bot.* 50–*Fl. dan.* 136–*Riv.* 89. 2, *Squamaria.* –*Barr.* 80–*H. ox.* xii. 16. 14–*Matth.* 964–*Ger.* 1387. 1–*J. B.* iii. 783. 2–*Blackw.* 430–*Dod.* 553. 1–*Park.* 1363. 4–*Clus.* ii. 120. 1–*Ger.* 1585. 1–*H. ox.* xii. 16. 11.

Root beaded. *Root-leaves* none. *Stem-leaves* membranaceous, coloured. *Branches* none. *Bloss.* lower lip white. LINN. *Stem* naked, except sometimes 1 or 2 oval scales. *Flowers* in a spike, from one side of the stem, in a double row. *Floral-leaves* roundish-oval, large, reddish, 1 at the base of each fruit-stalk, forming a double line opposite to the flowers. *Calyx* bellying, segments equal, bluntish. *Bloss.* upper lip rather short, lopped. Mr. WOODWARD. *Bloss.* pale purple except the lower lip.

Great Toothwort. Grows only in shady places which the sun's rays can scarcely penetrate, it being almost destitute of leaves, and such plants alone can live without the solar light. LINN. Woods, shady lanes, and at the bottom of mountains, but rather rare. Maidstone, Kent, Harefield, thickets below Conzickscar, near Kendal. [Informed that it is found in woods in Derbyshire. Mr. WOODWARD. In Plumpton. Mr. JACKSON. Not confined to shady woods, but its choice of situation is determined by other causes, for it is found in very light dry soil, and so entangled with the roots of some neighbouring tree, especially with those of the Hazel, that I have reason to believe it parasitical. Mr. GOUGH. At the roots of trees in a wood near Gainsford, Durham. Mr. ROBSON.] P. April, May.

PEDICULA'RIS. *Calyx* 5-cleft: *caps.* 2-celled, sharp-pointed, slanting: *seeds* few, angular, pointed.

P. Stem branched: calyx crested with callous dots: lip of the blossom slanting. palus'tris.

E. bot. 399.–*Riv. mon.* 92. 1, *Pedicularis.*–*Pet.* 36. 3–*Ger.* 913.

Stem about a foot high. *Branches* expanding. *Leaves* and *flowers* distant. Mr. WOODWARD. *Stem* angular, purplish. *Leaves* winged; leafits with winged clefts. *Flowers* solitary, in the bosom of the leaves. *Calyx* with 2 lips, opening sidewise; segments

cloven and jagged, 2 of them bordered with leafy appendages. *Bloss.* purple, sometimes white; *helmet* with a little tooth on each side, not notched at the end; *lower lip* fringed with fine soft hairs.

Marsh Lousewort. Marshes, ditches, moist meadows, and pastures. P. June, July.*

sylvat'ica. P. Stem branched: calyx oblong, angular, smooth: lip of the blossom heart-shaped.

E. bot. 400–*Clus.* ii. 111. 1–*Dod.* 556. 1–*Lob. obs.* 431. 3, *and ic.* i. 748. 2–*Ger. em.* 1071. 2–*Park.* 713. 1–*H. ox.* xi. 23. 13–*Fl. dan.* 225–*Pet.* 36. 4–*Trag.* 250–*Lonic.* i. 148. 2.

Stem very short, close to the ground. *Branches* from the root, long, spreading *Leaves* and *flowers* crowded. Mr. Woodward. *Branches* trailing. *Floral-leaves* deeply divided; segments toothed. *Calyx* angular, green within, purplish without, nearly half as long as the blossom, one of the clefts much deeper, segments toothed, that opposite to the deepest cleft the narrowest. *Bloss.* purple, much slenderer than the calyx, *tube* compressed; *upper lip* with a little tooth on each side; *lower lip* with 3 divisions, the middle segment a little smaller. *Filaments* the 2 taller hairy towards the top.

Common Lousewort. Wet pastures and heaths. P. June, July.†

Var. 2. Blossoms white.

[Near Redruth, Cornwall, towards the sea. Mr. Watt. Near Berkhamsted. Mr. Woodward.]

ANTIRRHI'NUM. *Calyx* with 5 divisions: *bloss.* either bulging at the base; or ending in a spur: *caps.* 2-celled, many-seeded, opening at the top and the divisions bent back.

(1) *Leaves angular.*

Cymbala'ria. A. Leaves heart-shaped, 5-lobed, alternate: stems trailing.

* This is an unwelcome guest in meadows, being very disagreeable to cattle. Goats eat it. Horses, sheep, and cows refuse it. Swine are not fond of it.

† The expressed juice, or a decoction of this plant, has been used with advantage as an injection for sinuous ulcers. It is said that if the healthiest flock of sheep be fed with it, they become scabby and scurfy in a short time; the wool will get loose, and they will be over-run with vermin. Cows and swine refuse it.

Curt.–E. bot. 502–*Riv. mon.* 86. 2, *Cymbalaria.–J. B.* iii. 685–*Matth.* 1184–*Lob. obs.* 337. 2. *and ic.* i. 615. 1–*Ger. em.* 529. 6–*Park.* 682. 1–*H. ox.* v. 14. 30–*Lon.* i. 61. 2.

Seeds wrinkled like the kernels of the walnut. *Bloss.* sometimes white. LINN. Whole plant smooth and shining. *Leaves*, the smallest with only 3 lobes; lobes of the lower blunt, of the upper pointed. *Flowers* on long fruit-stalks bending at the top. *Bloss.* spur as long as the calyx. WOODWARD. *Stems* thread-shaped. *Leaf-stalks* very long, bending like tendrils. *Calyx* segments equal, smooth. *Bloss.* pale purple; palate yellow, shaggy with orange-coloured hairs. *Nectary* slender, crooked, rather longer than the calyx.

Ivy-leaved Snap dragon. Old walls. About London, frequent, [particularly adjoining to the Thames. Walls of Burleigh Castle, near Stamford. Mr. WOODWARD.] P. June—Oct.*

A. Leaves egg-shaped, woolly, stems trailing. spu'rium.

E. bot. 691–*Curt.* 205–*Fl. dan.* 913–*Fuchs.* 167–*J. B.* iii. 372. 1–*Dod.* 42. 1–*Ger. em.* 625. 1–*Lonic.* i. 63. 3–*Park.* 553. 1–*H. ox.* v. 14. 27–*Matth.* 694–*Ger.* 501. 1–*Lob. adv.* 197, *and ic.* i. 470. 1–*Riv. mon.* 86. 1, *Elatine.*

Stem branched from the base, with long expanding hairs. *Leaves* hairy, sometimes slightly toothed. *Fruit-stalks* from the bosom of the leaves. *Calyx* very hairy. *Bloss. spur* shorter than the body of the blossom. Mr. WOODWARD. *Fruit-stalks*, the lower generally shorter, the upper longer than the leaves. *Bloss.* yellow and purple. ST.

Round-leaved Snap dragon. Cornfields. [Suffolk, frequent. Mr. WOODWARD.] A. July—Sept.

A. Leaves halberd-shaped, alternate: stems trailing. Elat'ine.

E. bot. 692.–*Curt.*–*Fl. dan.* 426–*Sheldr.* 60–*Park.* 553. 2–*J. B.* iii. 372. 2–*Ger.* 501. 2–*Matth.* 1012–*Blackw.* 170–*Dod.* 42. 2–*Lob. ic.* i. 470. 2–*Ger. em.* 625. 2–*H. ox.* v. 14. 28.

The capsule opens by the separation of a valve on each side. LINN. *Fruit-stalks* whilst in flower expanding, afterwards declining. *Nectary* a spur as long as the body of the blossom. Mr. WOODWARD. *Leaves* the lower ones opposite, sometimes egg-shaped and toothed. *Calyx* hairy. *Bloss.* upper lip yellow,

* Its trailing branches variously interwoven often cover old moist walls with a thick tapestry, and when in blossom make a beautiful appearance. Mr. WOODWARD.

lower lip and the *Anthers* edged with deep purple.] Mr. THOMSON.

Var. 2. Flowers regular, 5-cleft, and with 3, 4, or 5 spurs as in Peloria. HUDS.

Sharp-pointed Fluellin, or Snap-dragon. Cornfields. [Suffolk, frequent. Mr. WOODWARD. On walls in Cornwall. Mr. THOMSON.] A. Aug.—Oct.*

(2) *Leaves opposite: nectary long, pointed.*

re'pens. A. Leaves strap-shaped, crowded; the lower in fours; calyx as long as the capsule.

Dill. elth. 163. 197.

The lower leaves 4 or 5 in a whirl. *Flowers* in terminating spikes, pale blue. The flowering stem is stiff and upright, not at all corresponding with the idea given by the trivial name, which applies only to the root.

Creeping Snap-dragon. Fields, banks, and walls near Henly, and in Herts. RAY. [Specimens from the West of Cornwall, sent by Mr. GIDDY.] P. July, Sept.

arven'se. A. Leaves nearly strap-shaped; the lower in fours: calyx with clammy hairs: flowers in spikes: stem upright.

Dill. elth. 163. 198.

Leaves smooth. *Flowers* very small; blue. *Floral-leaves* and spur bent back. LINN.

Cornfields in a sandy soil. A. July, Aug.

Var. 2. Blossoms yellow.

Col. ecphr. 300. 1.

Near Settle, Yorkshire.

(3) *Leaves opposite: nectary short, blunt.*

monspessula'num. A. Leaves strap-shaped, crowded: stem shining, panicled: fruit-stalks spiked, shining.

J. B. iii. 459. 1.

Flowers sweet-scented. *Bloss. spur* straight, very short, shorter even than the calyx. Very nearly allied to *A. repens.* LINN. *Floral-leaves* spear-shaped, 1 at the base of each fruit-stalk. *Bloss.* pale blue, with darker spots; *spur* nearly as long

* This is considerably more bitter than the other species, and is said to have been used successfully in cases of foul ulcers, and in cutaneous eruptions.

as the body of the blossom. *Calyx* very small, segments pointed. WOODWARD.

Antirrhinum repens α HUDS. *Sweet smelling Snap-dragon.* Hedges near Penryn, Cornwall. Ray. [Stone wall between Penryn and Falmouth. Mr. WATT.] P. July—Sept.

A. Leaves mostly alternate, spear-shaped, blunt: stem very much branched, spreading. mi'nus.

Dicks. h. s.–Curt. 296–*Fl. dan.* 502–*Riv. mon.* 85. 2, *Linaria arv. min.–Lob. ic.* i. 406. 1–*Ger. em.* 549. 5–*Park.* 1334. 2–*J. B.* iii. 465. 1–*Matth.* 1198.

Leaves, only the 3 lowermost pairs opposite. LINN. *Stem* much branched, hairy. *Lower branches* opposite, the *upper* alternate. *Leaves* alternate. *Fruit-stalks* from the bosom of, and equal to, or longer than the leaves. *Calyx* segments strap-shaped, nearly equalling the blossom. *Bloss. spur* blunt, shorter than the body of the blossom. Mr. WOODWARD. *Bloss.* purple and yellowish white.

Least Snap-dragon. Gravelly cornfields. [Binham, Norfolk. Mr. CROWE. Near Berkhamsted, Herts. Mr. WOODWARD.] A. June—Sept.

(4) *Leaves alternate.*

A. Leaves spear-strap-shaped, crowded: stem upright: spikes terminating, sitting: flowers tiled. Lina'ria.

Dicks. h. s.–Curt.–E. bot. 658–*Kniph.* 6–*Fl. dan.* 982–*Riv. mon.* 83. 1, *Linaria.–Woodv.* 221–*Sheldr.* 49–*Ludw.* 12–*Dod.* 183. 1–*Lob. obs.* 222. 2. *and ic.* i. 406. 2–*Ger. em.* 550. 1–*Park.* 458. 1–*Ger.* 440–*Lonic.* i. 154. 2–*Fuchs.* 545–*J. B.* iii. 456. 2–*Blackw.* 115–*Trag.* 357–*H. ox.* v. 12. 10.

Bloss. the palate woolly, orange-coloured. *Nectary* long, awl-shaped. *Caps.* opening with equal divisions. LINN. *Stem* nearly cylindrical, smooth. *Branches* nearly upright, from the bosom of the leaves. *Calyx* smooth. *Bloss. lower lip*, segments circular, the middle one much smaller, the projecting part orange-coloured, woolly, the rest of the blossom pale yellow and smooth.

Var. 2. Flowers nearly white.

Var. 3. Nectaries 2 or more to each flower.

Toad-flax. Snap dragon. Butter and eggs. Barren meadows and pastures, road sides, common. P. July.—Sept.

Var. 4. *Peloria.* Blossoms regular, with 5 equal stamens and 5 nectaries.

Curt.–Amoen. acad. i. 3. *at p.* 298–*E. bot.* 260–*Kniph.* 9.

Cup 1 leaf, with 5 divisions, equal, very short, permanent. *Bloss. petal* 1, funnel-shaped, yellow, paler towards the base, with 5 nectaries at the base. *Tube* long, straight, cylindrical, but distended from the middle downwards. *Border* with 5 divisions, blunt, equal, expanding, inner side filled with tawny hairs. *Nectaries* 5, awl-shaped, flat, resembling a horn, growing in a circle round the base of the tube. *Stam.* filaments 5, hair-like, equal, half as long as the tube, and fixed to the receptacle. *Anthers* roundish, fixed sidewise. *Germen* egg-shaped. *Style* thread-shaped, as long as the stamens. *Summit* thick and blunt. *Capsule* egg-shaped, with 2 cells and 2 valves. *Receptacles* convex, growing to the partition. *Seeds* several, angular. LINN.

Sandy fields about Clapham. HUDS. A wood in Lincolnshire. E. bot. P. June, July.*

(5) *Bloss. gaping; without a spur.*

Oron'tium. A. Blossoms without spurs: flowers nearly spiked: calyx longer than the blossom.

Dicks. h. s.–Fl. dan. 941–*Curt.* 234–*Kniph.* 12–*Riv. mon.* 82. 2, *Antirrhinum arvense.–Dod.* 182. 2–*Lob. obs.* 222, 1, *and ic.* i. 405. 2–*Ger. em.* 549. 4–*Park.* 1334. 1–*Lonic.* i. 155. 3–*Matth.* 1199–*Ger.* 439. 4.

Capsule when opening resembles the skull of a monkey. LINN. *Stem* upright, branched, hairy. *Leaves* spear-shaped, very entire. *Flowers* axillary on very short friutstalks, sometimes, though rarely, sitting. *Cal.* segments strap-shaped, and lengthening after the falling off of the blossom. *Caps.* much shorter than the calyx. WOODWARD. *Calyx* hairy. *Blossoms* red with a little yellow.

Calf's-snout Snap dragon. [Cornfields in a sandy soil, and turnep fields. Norfolk. Mr. WOODW.—and Worcestershire. Mr. BALLARD.—Cornfields, Hants, common. Mr. PITT.]

A. July, August.

ma'jus. A. Blossoms without a spur: flowers in spikes: cups rounded.

E. bot. 129–*Kniph.* 1. 3–*Ludw.* 51–*Riv. mon.* 82. 1, *Antirrhinum–Mill.* 42–*Dod.* 182. 1–*Lob. obs.* 221. 2, *and ic.* i. 404. 2–*Ger. em.* 549. 1. 2–*Ger.* 438. 1–*Matth.* 1197.

* An infusion of the leaves is diuretic and purgative. An ointment prepared from them gives relief in the piles. The expressed juice, mixed with milk, is a poison to flies, as is likewise the smell of the flowers.—Cows, horses, and swine refuse it. Sheep and goats are not fond of it.

Stem spreading, rod-like. *Leaves* spear-shaped. *Calyx* leaves short, with clammy hairs. *Nectary* blunt, scarcely projecting. *Capsule* opening at the point obliquely, unequal at the base. LINN. *Leaves* on leaf-stalks. *Bloss.* rose red with a yellow palate; sometimes white.

Var. 2. Leaves sitting, bent downwards. *Bloss.* rose coloured or white.

Greater Snap dragon. Old walls; chalk cliffs near Dover, and between Northfleet and Gravesend. [Walls near Norwich, and Cambridge. WOODWARD.—Walls of Rushall Castle near Walsall. Mr. PITT.—Somersetsh. and Devon. plentiful, and on Berkley Castle and Church in rich profusion.]

P. B. June, July.*

SCROPHULA'RIA. *Cal.* 5-cleft: *bloss.* with 5 divisions; tube globular; the lower segment reflected: *caps.* 2-celled, partition double.

S. Leaves heart-shaped, doubly serrated: bunch com-Scorodo'nia. pound, with leaves interspersed.

H. ox. v. 35. *row* 2. *f.* 2–*Pluk.* 59. 5–*Pet.* 35. 11.

Resembles S. *nodosa* and S. *auriculata*, but differs from the latter in the hairiness of the stem, and the want of appendages to the leaves. *Stem* very hairy. *Leaves* with a gaping hollow at the base, angles or serratures pointed, *(Mant.)* serratures blunt. *(Syst. veg.) Bunch* with leaves interspersed, which is not the case with the other species. LINN. *Leaves* downy, the upper terminated by an awn as are the serratures. *Floral-leaves* awl-shaped, a pair beneath each division of the fruit-stalks. Mr. WOODW. *Bloss.* dusky purple.

Balm-leaved Figwort. Watery places, and hedges. Island of Jersey, between the Port and St. Hilary. Sea shore about St. Ives, Cornwall. P. July, Aug.

S. Leaves oblong-heart-shaped, 3-fibred at the base, nodo'sa. corners of the stem acute.

Fl. dan. 1167–*Kniph.* 2–*Ludw.* 72–*Gunn.* ii. 4. 1–*Blackw.* 87–*Fuchs.* 194–*J. B.* iii. 421–*Riv. mon.* 107. 1, *Scrophularia.*–*Matth.* 1130–*Dod.* 50. 1–*Lob. obs.* 289. 1, *and ic.* i. 533. 2–*Ger. em.* 716. 1–*Park.* 610. 1–*H. ox.* v. 8. *row* 3. 3–*Pet.* 35. 9–*Ger.* 579. 2–*Trag.* 184–*Lonic.* i. 135. 3.

* Though the seeds vegetate on the ground, it is only in dry soils and situations that the plant continues to live long enough to produce flowers.

Leaves 3-fibred as in *Arctium Lappa*, and *Tussilago Petasites*. *Bunch* terminating. LINN. *Stem*, angles clearly acute, sometimes edged with a membranaceous line, but not to be called winged. *Leaves* imperfectly heart-shaped, the base being rather cut transversely. CRANTZ. *Leaves* and serratures pointed. *Flowers* on forked branches. *Floral-leaves* spear-shaped, taper-pointed, a pair to each flowering branch. WOODWARD. *Upper-leaves* nearly sitting, spear-shaped. *Fruit-stalks* cylindrical, with short pellucid hairs terminated by globules. *Calyx* toothed and membranaceous at the end. *Bloss. tube* filled at the base with a honey-like liquor; *upper segments* purple; the rest pale green; the 2 *lateral* ones expanding; the *lower* rolled back. The little heart-shaped segment within the base of the 2 upper segments seems to deserve the name of nectary. *Caps.* sometimes with 3 or 4 cells.

Great Figwort. Kernelwort. Knobby-rooted Figwort. Woods and moist hedges. P. July.*

aquat'ica. S. Leaves heart-shaped, blunt, on leaf-stalks running down the stem: corners of the stem edged with a membrane: bunches terminating.

Curt. 291–*E. bot.* 854–*Kniph.* 11–*Blackw.* 86–*Fl. dan.* 507–*Dod.* 50. 2–*Lob. obs.* 288. 1, *and ic.* i. 533. 1–*Ger. em.* 715–*Park.* 613–*Pet.* 35. 10–*H. ox.* v. 8. *row* 3. 4–*Ger.* 579. 1.

Stem smooth, 4-cornered, corners membranaceous; the membranaceous leaf-stalks running down the corners of the stem, and forming a membranaceous edge, which is often waved. LINN. *Leaves* heart-egg-shaped, scolloped. *Panicle* naked, branched; the lower branches opposite, the upper alternate, forked. *Floral-leaves* awl-shaped, a pair at the base of each branch. Mr. WOODW. Upper *leaves* egg-shaped. *Flowers* dirty red.

Water Betony, or *Figwort*. Watery places, and banks of rivers. P. July. Sept.

verna'lis. S. Leaves heart-shaped; those of the stem in threes: fruit-stalks axillary, solitary, cloven.

E. bot. 567–*Fl. dan.* 411–*Riv. mon.* 107. 2; *Scrophularia flore lut–Barr.* 273–*Clus.* ii. 38. 1–*Ger. em.* 717–*Park.* 608. 4–*C. B. pr.* 112.

* This plant is hardly known in modern practice; but the rank smell, and bitter taste of the leaves, seem to indicate some active properties.—Swine that have the scab are cured by washing them with a decoction of the leaves. Wasps resort greatly to the flowers. Goats eat it. Cows, horses, sheep, and swine refuse it.

Stem and *leaves* hairy. *Bloss.* egg-shaped, yellow. LINN. *Leaves* doubly serrated. *Fruit-stalks* hairy, the primary ones longer than the leaves, the secondary short. *Floral-leaves* spear-shaped, hairy, a pair at the base of the secondary fruit-stalks. WOODWARD.

Yellow Figwort. Watery places and hedges. About Bury, and near Mitcham, Surry; Gloddaeth, Caernarvonsh. [Fornham, near Bury, Suff. Mr. WOODWARD.] B. April, May.*

DIGITA'LIS. *Cal.* with 5 divisions: *bloss.* bell-shaped: 5-cleft, bellying: *caps.* egg-shaped, 2-celled, many-seeded.

D. Segments of the calyx egg-shaped, acute: blossom purpu'rea. blunt, upper lip nearly entire.

Riv. mon. 104, *Digitalis*–*Curt.*–*Woodv.* 24–*Fl. dan.* 74–*Tourn.* 73. *A. E. L. M.*–*Fuchs.* 893–*Trag.* 889–*J. B.* ii. 812. 3–*Lonic.* i. 74. 1–*Blackw.* 16–*Dod.* 169–*Lob. obs.* 308. 2, *ic.* i. 572. 1–*Ger. em.* 790. 1–*Park.* 653. 1–*Ger.* 646. 1–*Lob. ic.* i. 572. 2–*H. ox.* v. 8. *row* 1. 1–*Swert.* 6. 1 *and* 2.

Leaves wrinkled. *Bloss.* the bellying part sprinkled on the inside with spots like little eyes. LINN. *Leaves* scolloped; teeth small, deep; with a net-work of fleshy veins underneath. *Leaf-stalks* half embracing the stem. *Floral-leaves* spear-shaped, half embracing the stem, purplish towards the point. Mr. WOODWARD. *Leaves* sitting, a little woolly underneath. *Flowers* in long terminating spikes, all pointing one way. *Blossoms* purple, elegantly mottled within; inversely conical, but swelling out on the under side.

Common Foxglove. Hedge banks and sides of hills in dry gravelly or sandy soil, but it is not found in flat grounds, except in very dry land, for though the seeds vegetate there, the winter wet rots the roots, which are otherwise biennial.

Very common in the midland, but rare in the eastern counties. June, July.†

Var. 2. Flowers white.

* The different species of Scrophularia afford nourishment to the *Phalæna Verbasi*, *Curculio Scrophulariæ*, and *Tenthredo Scrophulariæ*.

† It is certainly a very active medicine, and merits much attention. For some acconnt of its medical uses see WITHERING on the Foxglove, 1785, octavo, with a beautiful fig. of the plant copied under the inspection of Mr. Curtis from his Flora Londinensis.

[Shenstone lane near Hartlebury, Worc. ST.—About Moxhull, Staffordsh.] The pure milk-white colour of the blossoms makes this variety an ornament to our flower gardens.

LINNÆ'A. *Calyx* double, that of the fruit 4-leaved, that of the flower with 5 divisions, superior: *bloss.* bell-shaped: *berry* dry, 3-celled.

borea'lis. L. Flowers in pairs.

E. bot. 433–*Fl. dan.* 3–*Blackw.* 597–*Fl. lapp.* 12. 4–*Kniph.* 9–*Ludw.* 142–*H. ox.* v. 2. 19.

Stems thread-shaped, from 3 to 6 feet long, trailing. *Leaves* opposite, roundish egg-shaped, with 2 or 3 serratures on each side, ending in leaf-stalks. *Branches* alternate, undivided, upright, an inch long, bearing 6 or 8 leaves. *Fruit-stalks* terminating the older branches, solitary, a finger's length, upright. *Bloss.* white on the outside, flesh-coloured within. LINN.

[Lately found in a wood at Inglesmadie in Kincardinshire, by Mr. BEATTIE.] P. June.

SIBTHOR'PIA. *Cal.* with 5 divisions: *bloss.* wheel-shaped, with 5 divisions: *stamens* in distant pairs: *capsule* compressed, roundish, 2-celled; partition tranverse: *seeds* few.

Europœ'a. S. Leaves between kidney and target-shaped, scolloped.

E. bot. 649–*Pluk.* 7. 6–*Pet.* 6. 11.

Habit and *stem* of *Hydrocotyle*, fruit of *Veronica*. *Root* annual, but sometimes, as also the whole plant, perennial. *Stems* numerous, a foot long, thread-shaped, limber, not much branched, trailing, often throwing out roots, near the leaf-stalks, hairy. *Leaves* alternate, very remote, on leaf-stalks, like those of the *Chrysosplenium*, heart-orbicular, one side opening to near the centre, horizontal, with 6 or 7 slight lobes, the lateral ones the smallest, blunt, about the breadth of a pea, sprinkled with small, simple, scattered, transparent bristles. *Leaf-stalks* short, ascending. *Fruit-stalks* thread-shaped, from the bosom of the leaves, upright, solitary, as long as the flower, often shorter than the leaf-stalks, nodding after flowering. *Floral-leaves* awl-shaped, one towards the point of the fruit-talks. *Calyx* 5-cleft, hairy. *Bloss.* generally 5-cleft, small, purple at the bottom, about the size of that of the *Limosella*. *Stamens* equal, always 4, with a vacancy at one of the divisions of the blossom, whence its inequality, and its title to a place in this class. LINN.

Bastard Moneywort. Shady marshy places, springs and rivulets. Cornwall and Devonsh. frequent. About Longsledale, Westmoreland. P. July—Sept.

LIMOSEL'LA. *Cal.* 5-cleft: *bloss.* 5-cleft, equal: *stamens* approaching in pairs: *germen* 2-celled: *caps.* often 1-celled, 2-valved, many-seeded.

L. Leaves spear-shaped.

E. bot. 357–*Fl. dan.* 69–*Hall. jen.* 6. 3. *at p.* 295–*H. ox.* xv. aquat'ica.
2. *vvw* 2. *f.* 2–*Pluk.* 74. 4.–*Pet.* 65. 12.

Leaves rolled inwards. *Bloss.* hairy above. *Stamens* 2 and 2, in opposite pairs. LINN. *Stems* trailing. *Leaf-stalks* very long. *Flowers* solitary. *Bloss.* white without, reddish within.

Bastard Plantain, or *Plantain Mudweed.* Muddy and gravelly places liable to be flooded, and where waters have stood during the winter. A. July—Sept.

OROBAN'CHE. *Cal.* somewhat cloven: *bloss.* gaping: *germen* resting on a gland; *caps.* 1-celled, 2-valved, many-seeded.

O. Stem unbranched, pubescent: stamens the length of the blossom. ma'jor.

Curt. 232–*E. bot.* 421–*Kniph.* 7–*Tourn.* 81, *Orobanche.*–*Clus.* i. 270. 2–*Dod.* 552. 3–*Ger. em.* 1311. 2–*H. ox.* xii. 16. 1–*Riv. mon.* 89. 1, *Orobanche.*–*Ger.* 1130. 2–*Pet.* 69. 10–*Lob. obs.* 531. 1. *a, and ic.* ii. 89. 1. *a*–*Ger. em.* 1311. 1. *a*–*Park.* 229. 1. *a*–*Matth.* 536–*J. B.* ii. 781. 1–*Lonic.* ii. 24. 1.

Root large, fleshy, oval, scaly. *Leaves* none. *Stalk* 8 to 12 inches, with dry scattered scales. *Flowers* spiked, cylindrical, brownish rust-coloured. *Summit* yellow, bluntly heart-shaped. *Seeds* exceedingly numerous. RELHAN. *Plant* rust-coloured. *Root* bulbous. *Stem* cloathed with egg-shaped scattered scales. *Floral-leaves* spear-shaped, taper-pointed, generally longer than the flower. *Calyx* with 4 teeth, the 2 outer longer and sharper, the lower blunt. WOODWARD. *Flowers* rust-colour, with somewhat of a purplish tinge.

Common Broomrape. This parasitical plant is found in dry ground, on the roots chiefly of the class *Diadelphia,* as Spartium *scoparium,* Genista *tinctoria,* Trifolium, Orobus *tuberosus,* and also on Hieracium *sabaudum,* and Centaurea *Scabiosa.* [Also in cornfields in a sandy soil, which have probably had Broom growing

on them. Broom Hills, very frequent. Mr. Woodw.—Shrawley Wood, Worcestershire. Mr. Ballard.—On a dry bank near Clifton upon Teme, Worcestersh. St.—Raby Park, County of Durham. Mr. Robson.] P. May, June.

ramo'sa. O. Stem branched: blossoms 5-cleft.

E. bot. 184; *(the root in a diseased state, Mr. Woodward.)*—*Sabbat.* iii. 12—*Cam. epit.* 311—*J. B.* ii. 781. 2—*Clus.* i. 271. 1—*Ger. em.* 1312. 3—*Pet.* 69. 11.

Root a solid bulb, elliptical, naked, or furnished with 1 or 2 spear-shaped sitting scales, and numerous short thick fibres affixed laterally, adhering and intermixed with the fibres of the roots of Hemp or other plants. *Stem* a continuation of the bulb, nearly cylindrical when fresh, angular when dry, slightly downy, brown or dirty yellow, naked, or furnished with very few scales. *Branches* either immediately from the root, or alternate, swelling at the base, nearly upright, with each a scale at the base. *Spikes* terminating. *Floral-leaves* oval spear-shaped, somewhat keeled, sitting. *Calyx* segments pointed, the 2 outer largest, the inner halved, the sides next the stem being wanting. *Bloss. tube* bellying, yellow at the base, the upper part and lips bluish purple, hairy on the outside; *upper lip* roundish, cloven, *lower lip* broad, 3-cleft, the middle segment largest, and with 2 yellowish prominencies at the mouth, similar to those in *Melampyrum*. *Filaments* within the tube, bluish. *Anthers* yellow. *Style* longer than the filaments and bending towards them, bluish. *Summit* blunt. Woodward. *Stem* about a span high, generally, but not always branched.

Branched Broomrape. Orobanche minor purpureis floribus sive ramoso. J. B. ii. 781. (Mr. Woodward.) Cornfields and dry pastures. Near Beccles, Suffolk. Ray.—Isle of Sheppey, and near Feversham and Rochester; about Glastonbury, and in Devonshire and Hants. Huds.—[Brome near Bungay, Suffolk, on the roots of Hemp and Galeopsis *Tetrahit*, both annual plants. Mr. Woodward.—Hemp fields near Wisbeach. Mr. Relhan.] A. June—Sept.

Var. 2. Stem simple.

J. B. ii. 781. 1.

Stem very scaly, slightly downy; *scales* oval-spear-shaped. *Spike* loose. *Floral-leaves* oval-spear-shaped, somewhat keeled, as long as the calyx. *Cal.* with 4 deep divisions; segments awl-shaped, the 2 outer the largest, the inner one next the stem very small. *Bloss. tube* longer than the calyx; *upper lip* short, cloven, roundish; *lower* 3-cleft. *Stamens* within the flower. Woodward.

Field of oats 2 miles beyond Rochester on the left hand going towards Horn's-place, Ray.—[Northreps, Norf. a single plant.

Mr. PITCHFORD.—Specimen from Mr. Lightfoot agreeing with that of Mr. Pitchford's. Mr. WOODWARD.]

Dr. Smith, in E. Bot. is inclined to think that Ray's plant should be referred to the O. major, and doubts whether Mr. Pitchford's specimen from Northreps be the same with either, observing that it agrees better with the O. purpurea of Jacquin: but remarks also that the whole genus wants a thorough investigation.

CLASS XV.

TETRADYNAMIA.

SILICULOSA.

(1) *Pouch not notched at the end.*

MŒN'CHIA. *Pouch* egg-shaped, crowned with the style: valves rather convex.

DRA'BA. *Pouch* with nearly flat valves: *Style* none.

SUBULA'RIA. *Pouch* with half-egg-shaped valves: *Style* shorter than the pouch.

MY'AGRUM. See Mœnchia.

BU'NIAS. *Pouch* deciduous; egg-oblong; prickly.

CRAM'BE. *Pouch* deciduous; globular; like a dry berry. *Filaments* 4, long ones cloven at the end.

I'SATIS. *Pouch* deciduous; spear-shaped; with 1 seed.

VEL'LA. *Pouch* with valves only half the length of the partition.

[Cochlearia Coronopus.]

(2) *Pouch notched at the end.*

I'BERIS. Two outermost petals the largest.

COCHLEA'RIA. *Pouch* heart-shaped: *Valves* blunt; bulging.

LEPI'DIUM. *Pouch* heart-shaped: *Valves* sharply keeled.

THLAS'PI. *Pouch* inversely heart-shaped: *Valves* (in some species) bordered; keeled.

SILIQUOSA.

(1) *Cup closed; the leafits approaching lengthwise.*

RA'PHANUS. *Pod* jointed.

ERYS'IMUM. *Pod* 4-cornered.

CHEIRAN'THUS. *Germen* with a gland on each side its base.

HES'PERIS. *Glands* within the shorter stamens: *Petals* oblique.

A'RABIS. *Glands* 4: within the leafits of the cup: *Summit* undivided.

BRAS'SICA. *Glands*, 2 within the shorter stamens; 2 on the outside the longer stamens.

TURRI'TIS. *Petals* upright.

DENTA'RIA. *Pod*, valves, rolling back when open.

(2) *Cup open, the leafits wide asunder upwards.*

CARDA'MINE. *Pod* opening: *Valves* rolling back.

SINA'PIS. *Pod* opening: *Cup* expanding horizontally.

SISYM'BRIUM. *Pod* opening: *Valves* nearly straight: *Cup* open.

[Brassica Napus.]

SILICULOSA.

MŒN'CHIA. *Pouch* entire, egg-shaped, crowned with the style: *valves* rather convex, parallel to the partition: *cells* with many seeds. GMELIN.

sati'va. M. Pouches inversely egg-shaped, on fruit-stalks, containing many seeds.

Fl. dan. 1038–*Knipb.* 11–*Trag.* 655–*Lonic.* i. 154. 1–*Ger.* 213. 2–*Dod.* 532. 1–*Lob. obs.* 111. 3. *and ic.* i. 224. 2–*Ger. em.* 273. 3–*Park.* 868. 2–*Pet.* 48. 11–*H. ox.* iii. 21. *row* 3. 2–*J. B.* ii. 892–*H. ox.* iii. 21. *row* 2. 1. *f.* 4–*Matth.* 1172.

Pouch, each side bellying out, but marked with a cavity pressed inwards, which cavity disappears in the cultivated plants. LINN. *Stem* cylindrical below, somewhat angular above, slightly hairy, clothed with leaves. *Leaves* alternate, spear-shaped, arrow-shaped at the base, half embracing the stem, slightly toothed, hairy. *Bloss.* yellow. *Pouches* on long fruit-stalks, terminated by a long style; *partition* extending beyond and forming a strong ridge round the seed-vessel. WOODWARD.

Myogrum sativum. Sp. pl. *Gold of Pleasure. Common Camline.* Cornfields; among flax often plentifully, but apparently imported along with it from foreign countries. Near Bridport and Lime in Dorsetshire. [Heydon, Norfolk. Rev. Mr. BRYANT.] A. May, June.*

BU'NIAS. *Pouch*, or rather *drupa*, 4-sided, deciduous: angles unequal, acute.

B. Pouch egg-shaped, smooth, with 2 edges and 2 joints. Caki'le.

E. bot. 231–*Fl. dan.* 1168–*Kniph.* 8–*Lob. obs.* 110. 3. *ic.* i. 223. 1–*Ger. em.* 248. 5–*Park.* 821. 1–*H. ox.* iii. 6. 20. –*Pet.* 46. 6–*J. B.* ii. 868. 1.

Plant smooth, sea-green, of a salt taste. *Leaves* fleshy. *Pouches* falling off, and leaving a cloven base behind. LINN. *Root* slender, woody, running deep into the sand, and terminated by a few rigid fibres. *Stem* woody, much branched. *Leaves* oblong wedge-shaped, sitting, deeply cut, or wing-cleft. *Flowers* pale purple. *Fruit-stalks* short. *Pouches* large and fleshy. WOODW. *Stem* 2 or 3 inches high, almost woody; large branches trailing, smaller ones ascending. *Leaves* wing-cleft, fleshy, smooth, the terminating segment largest. *Glands*, 1 within each shorter stamen, and 1 on the outside each pair of longer stamens. *Pouch* oblong-egg-shaped, crooked, 1 seed in each.

Sea Rocket. Sea shore, [in deep sand, frequently just above high water mark. Yarmouth, Norfolk; Southwold, Suffolk. WOODWARD. On the sandy den at Teignmouth, plentiful.] A. June—Oct.

CRAM'BE. The 4 longer filaments cloven at the top, one of the clefts bearing the anther: *seed-vessel* simple, globular, deciduous.

C. Leaves and stem smooth. marit'ima.

* It is cultivated in Germany for the sake of the expressed oil of the seeds, which the inhabitants use for medicinal, culinary, and economical purposes. The seeds are a favourite food with geese. Horses, cows, goats, and sheep eat it.

Fl. dan. 316–*Ger.* 248. 16–*Pet.* 48. 12–*Ger. em.* 315. 15–*H. ox.* iii. 2. 16–*Park.* 270. 4. *b.*–*Lob. adv.* 92. *and ic.* i. 245–*Park.* 270. 4. *a.*–*Ger.* 248. 15–*J. B.* ii. 830. 2; *(not Kniph.* 10, *C. maritima.)*

This plant lurks as it were under the disguise of a *Brassica*, as is evident from its fructification being so distinct. Linn. Whole *plant* smooth. *Stems* many, spreading, and much branched. *Root-leaves* on leaf-stalks, very large, spreading wide on the ground, variously waved, jagged, and indented, smooth, sea-green, sometimes tinged with purple; *stem-leaves* sitting. *Fruit-stalks* long. *Flowers* white. *Pouch* at first egg-shaped, terminated by a blunt summit, afterwards nearly globular. Woodw. *Leaves* fleshy, glaucous, indented and curled; upper ones nearly sitting and egg-shaped. *Bloss.* large, white, but the claws of the petals and the filaments often purple.

Sea Colewort. Cliff Kale. Sandy sea shores. [Roosebeck in Low Furness, Lancashire. Mr. Woodward. Near Mevagissey, Cornwall. Mr. Watt. Chalk cliffs at Weymouth and Lulworth-cove, and many other places on that coast.] P. May, June.*

Var. There is one variety with jagged leaves, and another with yellowish blossoms.

I'SATIS. *Pouch* or *seed-vessel* simple, oval-spear-shaped, compressed, 1-celled, 1-seeded, crowned by the style.

tincto'ria. 1. Root-leaves scolloped; stem-leaves arrow-shaped: pouches oblong.

Cultivated.—*Fuchs.* 332–*J. B.* ii. 909. 2–*Matth.* 635–*Dod.* 79. 2–*Lob. obs.* 190. 1. *and ic.* i. 352. 1–*Ger. em.* 491. 2–*Pet.* 48. 9.

Wild.—*E. bot.* 97–*Fuchs*, 331–*J. B*, ii. 909. 1–*Matth.* 634–*Dod.* 79. 1–*Lob. obs.* 189. *and ic.* i. 351. 2–*Ger. em.* 491. 1–*Park.* 600. 3–*Trag.* 256–*Ger.* 394–*H. ox.* iii. 15. 10 *and* 11–*Blackw.* 246–*Lonic.* i. 149. 1.

Pouches on slender fruit-stalks, hanging down. Mr. Woodw. *Stem* branched, woody. *Leaves*, the uppermost strap-spear-shaped. *Calyx* yellow. *Petals* notched at the end; yellow. *Pouches* chesnut-coloured.

Wild Woad. Cornfields, and borders of cornfields, but rather rare. Huds. New Barns near Ely. Relhan. [Culti-

* The young and tender leaves are boiled as cabbage, but when full grown they occasion giddiness. Horses, cows, goats, sheep, and swine eat it.

vated about Heynsham, Somersetshire. Mr. SWAYNE. By the river Wear, near Durham. Mr. ROBSON.] B. June, July.*

VEL'LA. *Pouch* globular, partition twice as large as the valves, and extending beyond them like the bit of a spoon.

V. Leaves wing-cleft: pouches pendent. an'nua.

Kniph. 10–*Clus.* ii. 130. 1–*Lob. obs.* 102. 3, *and ic.* i. 205. 2–*Ger. em.* 247. 4–*Park.* 830. 2–*J. B.* ii. 920–*Pet.* 50. 5–*Trew. pl. rar.*

Stem branched, hairy. *Leaves*, segments strap-shaped, toothed, hairy. *Petals* white, with deep purple veins. *Pouches* hairy, egg-shaped, terminated by the extension of the partition. WOODWARD. *Pouches* set with soft prickles. *Bloss.* pale yellow.

Cresse Rocket. Annual Cresset. On Salisbury Plain, not far from Stonehenge. RAY. A. June.

SUBULA'RIA. *Pouch* entire, egg-shaped: *valves* egg-shaped, concave, placed across the partition: *style* shorter than the pouch.

S. Leaves awl-shaped. aquat'ica.

Dicks. h. s.–E. bot. 732–*Fl. dan.* 35–*H. ox.* viii. 10. 29–*Pet.* 48. 8–*Pluk.* 188. 5.

Flourishes and blossoms under water. LINN. *Leaves* green, semi-cylindrical, full of pith. *Bloss.* white. *Seeds* yellow. RAY.

Water Awlwort. Grows under water on a gravelly bottom in Lough Neagh, Ireland, on the side next Kilmore. RAY. Loch Tay and Loch Carran, Scotland. Mr. STUART. In lakes on the mountains near Llanberrys. HUDS. And Llyn y Cwn Snowdon. PENN. [Ffynnon frêch near Snowdon. Llyn Aled, Denbighshire. Mr. GRIFFITH. In the Loch of Clunie, Perthsh. generally in about 4 feet water. Mr. BROWN.] A. June, July.

DRA'BA. *Pouch* entire, elliptical-oblong, rather compressed; *valves* flat, parallel to the partition: *style* none.

* With the juice of this plant, it is said, the ancient Britons painted their bodies to render themselves more terrible to their enemies. It is much used by the dyers for its blue colour, and it is the basis of many other colours. It is cultivated for their use. Cows eat it; horses, sheep, and goats refuse it.

ver'na. D. Stalks naked: leaves sparingly serrated. LINN. Petals divided. SM.

Fl. dan. 983–*Curt.*–*E. bot.* 586–*Thal.* 7. *E.*–*Walc.*–*Dod.* 112. 2–*Lob. obs.* 249. 2. *and ic.* i. 469. 1–*Ger. em.* 624. 1–*Park.* 556. 3–*Ger.* 499. 1–*Pet.* 48. 6 *and* 7–*J. B.* ii. 937. 2–*Seguier.* i. 4. 3. *at p.* 328–*Kniph.* 1.

Flowers hanging down at night. *Petals* divided. LINN. *Stalks* smooth after flowering, but hairy when young. *Leaves* hairy, sometimes entire. *Flowers* when in blossom in broad-topped spikes, about 15 in each. It is difficult to find the full complement of stamens when the flower is fully expanded, as they drop when the germen begins to enlarge.

Common Whitlow-grass. Nailwort. Walls and dry places, and pastures. A. March, April.*

stella'ta. D. Leaves hairy, toothed or entire: stalk with 1 leaf: pouches oblong, upright. JACQ. Petals entire.

Jacq. austr. 432; *and enum.* 4. 3.

Leaves inversely egg-shaped, blunt, thick, tapering at the base into leaf-stalks, either entire or with a single tooth on each side, fringed and set on each surface with white hairs, the ends of which are star-like; these hairs are often wanting on the upper surface. *Stalk* cylindrical, upright, hairy like the leaves, especially on the lower part; furnished with 1, rarely with 2 leaves. *Corymbus* terminating, consisting of about 7 longish fruit-stalks. *Petals* pure white, large, entire, expanding. JACQUIN. Not *Draba hirta* of Linnæus. DICKSON. In the *D. hirta* the petals are notched at the end.

Found by Mr. DICKSON on rocks in the Highlands of Scotland; on Ben Lawers, at great heights, and on the very summit. Mr. BROWN. A. May—Aug.

mura'lis. D. Stem branched: leaves egg-shaped, sitting, toothed.

Col. ecphr. 272–*Barr.* 816–*Bauh. pr.* 50–*Park.* 843. 13–*H. ox.* iii. 20. 5–*J. B.* ii. 939. 1–*Pet.* 48. 5.

Fruit-stalks horizontal when the fruit is ripe, longer than the pouches. *Pouches* nearly slanting. *Flowers* white. LINN. *Root-leaves* entire at the base, toothed upwards. *Pouches* exactly elliptical, ending in a short blunt knob which is the summit. WOODW. *Stem* and *leaves* hairy. *Stem-leaves* rather heart-shaped. *Petals* very slightly notched at the end.

* One of our earliest flowering plants. It is good as a sallad. Goats, sheep, and horses eat it; cows are not fond of it; swine refuse it.

Speedwell-leaved Whitlow-grass. Fissures of rocks, mountainous and stony pastures, especially in a calcareous soil, in Derbyshire, Yorkshire, and Westmoreland. Arnbar Scar near Arncliff, Littendale and Malham Cove. CURT. [Near to a cotton manufactory a little below Malham Cove. Mr. CALEY.] A. May.

D. Stem-leaves numerous, hoary: pouches oblong, slanting, nearly sitting. — inca'na.

E. bot. 388–*Fl. dan.* 130–*Pet.* 48. 3 *and* 4–*Pluk.* 42. 1.

Root a hand's breadth long. *Root-leaves* very numerous, disposed in a rose-like form, spear-shaped, cottony and somewhat hairy, entire, pointed; *stem-leaves* often upwards of 30, sitting, marked with a few teeth, similar to the root-leaves, but shorter, the uppermost egg-shaped, on the lower part of the stem more crowded. *Stem* a hand's breadth long, straight, hoary, clothed with leaves. *Flowers* in a small terminating corymbus, which, when the fruit is ripe, becomes a *bunch*. *Petals* white, slightly notched. *Pouches* upright, egg-oblong, bent contrary to the sun, compressed, naked. *Fruit-stalks* hoary, 3 times shorter than the pouches, stiff, approaching to the stem. It flowers with the *Anemone*. LINN. *Stems* 6 to 9 inches, slightly cottony, simple, crooked. *Leaves* oval-spear-shaped, a little hairy, the lower slightly, the upper deeply toothed. *Fruit-stalks* nearly as long as the pouches. *Pouches* spear-shaped, smooth, twisted, terminated by the blunt summit. Mr. WOODWARD.

Wreathen-podded Whitlowgrass. Fissures of limestone rocks, and moist mountainous meadows, Westmoreland and Caernarvonshire. About Settle. CURT. [Rock near the summit of Ingleborough, on the west side. Mr. WOODWARD. Side of Roseberry Coppin, Yorkshire, 1779. Mr. ROBSON.] B. May—July.

LEPID'IUM. *Pouch* notched at the end, compressed: *valves* sharply keeled; 1 seed in each cell.

(1) *Four stamens longer.*

L. Leaves winged, very entire: petals notched, smaller than the calyx. — petræ'um.

E. bot. 111–*Jacq. austr.* 131–*Col. ecphr.* 273–*Crantz.* i. 2. 4. 5.

One of our smallest delicate plants. LINN. *Leaves* dark green; *leaflts* elliptical, tapering each way, on leaf-stalks, very entire, thickish, from 6 to 12 pairs, with an odd one. *Flowers* in a close corymbus, which, as the fruit ripens, lengthens out into a bunch. *Petals* spatula-shaped, white, as long as, and narrower

than the calyx; generally very entire, but sometimes slightly notched. *Pouches* broad egg-shaped, blunt, convex underneath, flat above; *valves* keeled. JACQ. *Stem* branched from near the root. *Leafits* spear-shaped, horizontal, just sensibly broader than the mid-rib. ST.

Mountain Dittander. Rocks, walls, and stony places. St. Vincent's Rock, on the low rocks over against Goram's Chair, and on the walls about Bristol. Uphill, Somersetshire. [Dovedale. Mr. CALEY.] B. March—April.

latifo'lium. L. Leaves egg-spear-shaped, entire, serrated.

Fl. dan. 557–*E. bot.* 182–*Kniph.* 3–*Fuchs.* 484–*J. B.* ii. 940. 1–*Trag.* 83–*Matth.* 609–*Dod.* 716. 1–*Lob. obs.* 172. 4, *and ic.* i. 318. 2–*Ger. em.* 241. 2–*Park.* 855. 1–*H. ox.* iii. 21. *row* 2. 1–*Blackw.* 448–*Lonic.* i. 161–*Ger.* 187. 2–*Pet.* 48. 10–*J. B.* ii. 940. 2.

Stem branched, zigzag. *Leaves* smooth, sometimes entire, sometimes a little serrated about the middle part; lower ones unequal at the base. *Calyx* leaves purplish, white at the edge. *Pouch* hairy. *Flowers* numerous, in panicles, white.

Dittander Pepperwort. Poor-man's Pepper. Common Dittander. Meadows and pastures. Hythe, near Colchester; Heybridge, near Maldon; and marshes near Grays, in Essex; Sheringham Cliffs, Norfolk; and between Beningborough and Mitton in the North Riding of Yorkshire. [Near Seaton, plentifully. Mr. ROBSON. Near St. Asaph. Lord LEWISHAM.] P. June, July.*

(2) *Stamens either 2 or 4.*

did'ymum. L. Stem trailing, hairy: leaves with winged clefts: fruit double. (E. bot.)

E. bot. 248.

Stem a foot high. *Leaves* winged; *leafits* sitting, alternate, spear-shaped, toothed on the fore edge. *Bunches* from the bosom of the leaves, as long as the leaves. *Flowers* very minute. *Caps.* roundish, double, somewhat wrinkled. An intermediate plant between the *Cochlearias* and *Lepidiums*. LINN. *Stamens* 2, or 4. *Flowers* white.

L. *anglicum*. HUDS. *Procumbent Dittander.* On rubbish about Exeter; and Truro and Penryn, Cornwall. [Near Exeter. Mr. NEWBERRY.] A. June, July.

rudera'le. L. Root-leaves tooth-winged; branch-leaves strap-shaped, very entire: petals sometimes wanting.

* This is one of the acrid antiscorbutics, and was formerly used in the place of *Horse-radish*. An infusion of it vomits.

Trag. 83. 2–*Fl. dan.* 184–*Matth.* 608–*Dod.* 713. 1–*Lob. ic.* i. 214. 1–*Ger. em.* 262. 4–*Park.* 829–*H. ox.* iii. 19, *row* 2. *f.* 3–*Pet.* 50. 1–*Fuchs.* 307–*J. B.* ii. 914.

Stem usually crooked, wood-like, stiff. *Leaves* fleshy, smooth. *Fruit-stalks* slender. *Pouches* numerous, small, much compressed. WOODWARD. *Flowers* either with or without petals. *Stam.* 2, or 4.

Narrow-leaved Dittander. On rubbish, and on the sea coast. Maldon, Essex. Yarmouth, Lynn, and Clay, Norfolk; Truro, Cornwall. [Salt marshes near Yarmouth, Norfolk, plentifully. Mr. WOODWARD. Rubbish on the side of the Severn, above Worcester. ST. Near King's Weston, below Bristol.] The plant smells like a fox. B. June, July.

THLAS'PI. *Pouch* inversely heart-shaped, notched at the end; valves like a keeled boat, often winged with a border; cells many-seeded.

T. Pouches round and flat: leaves oblong, toothed, smooth. arven'se.

Ludw. 173–*Fl dan.* 793–*Blackw.* 68–*Matth.* 567–*Ger.* 204. 1–*J. B.* ii. 923–*Sheldr.* 105–*Dod.* 712–*Lob. obs.* 108. 1, *and ic.* 1. 212. 2–*Ger. em.* 262. 1–*Park.* 836. 1–*H. ox.* iii. 17. 12–*Pet.* 50. 9.

Leaves arrow-shaped at the base, embracing the stem. *Pouches* deeply notched. Mr. WOODWARD. *Stem* about 2 feet high, with 7 or 8 membranaceous edges. *Seeds* spear-shaped, but compressed, hanging or pointing downwards. *Bloss.* white.

Treacle Mustard. Penny-cress. Cornfields, especially in a muddy soil. A. June, July.*

T. Pouches roundish: leaves arrow-shaped, toothed, hoary. campes'tre.

Curt.–*Ger.* 204. 2–*Pet.* 50. 7–*Fuchs.* 306–*J. B.* ii. 921. 1–*Trag.* 87.

Leaves very soft, and almost velvety. LINN. *Stems* many from the same root, thickly clothed with leaves. *Leaves* growing without order. In some situations it is green and slightly hairy, in others very downy and white, and is then the Th. *hirtum* of Hudson. WOODWARD. *Stem* clothed with leaves, undivided except at the top, where it separates into 7 or 8 branches, above the branches naked. *Root-leaves* spear-egg-shaped, on long flat leaf-stalks, sometimes wing-cleft at the base. *Fruit-stalks* horizontal. *Pouches* nearly heart-shaped, smooth, convex

* The whole plant has something of a garlic flavour. The seeds have the acrimony of mustard. When cows eat it their milk gets a bad taste. —Cows, goats, and swine eat it. Sheep and horses refuse it.

on the lower, and concave on the upper surface. *Bloss.* white. *Cups* with brown spots.

Mithridate Mustard. Bastard Cress. Cornfields, and sunny situations, in a clayey and sandy soil. B. June, July.

Var. 2. Leaves, smooth, scarcely serrated; those at the root not indented.

Blackw. 407–*Dod.* 713. 3–*Lob. obs.* 108. 2, *and ic.* i. 213. 1–*Ger. em.* 262. 2–*Park.* 836. 2–*Pet.* 50. 8–*H. ox.* iii. 17. 14–*Matth.* 566.

Leaves smooth, broader than 1, and not so tapering to a point. *Pouches* smooth. RAY.

Thlaspi vaccariæ folio glabrum. R. Syn. 305. Between Beccles and Bungay, Suffolk. RAY.

Var. 3. *cottony.* Pouches, stem and leaves cottony.

This has been supposed to be the Thlaspi hirtum of Linn. but I am of opinion with Mr. Woodward, that it is only a variety of the Thl. campestre. It is like soft velvet to the touch, nor are the pouches properly rough with hairs, (hirsute) they are only cottony in a slight degree. It differs most obviously from the T. campestre, in the root-leaves being entire, and on very long leaf-stalks. It is about 10 or 12 inches high, but the Linnæan Thl. hirtum is not above half so high, and has root-leaves inversely-egg-shaped, and broad at the end, but in our plant they are strap-spear-shaped.

Thlaspi hirtum of Hudson and other English authors. [On Dartmoor.] May, June.

perfolia'tum. T. Pouches inversely-heart-shaped: stem-leaves heart-shaped, smooth, somewhat toothed: petals as long as the calyx: stem branched.

Dicks. h. s.–Jacq. austr. 337–*Col. ecphr.* 276. 2–*Tab. hist.* 851–*Pet.* 50. 12.

Stem smooth. *Bloss.* white, hardly larger than the calyx. *Stam.* longer than the flower; white. *Anthers* yellowish. *Pouch* like that of the common Shepherds-Purse. LINN. *Seeds* 4 in each cell. POLLICH. *Stem* upright, simple, but in gardens and in a rich soil branched. Lowermost leaves egg-shaped, on leaf-stalks. About 8 inches high. *Leaves* glaucous green, clasping the stem.

Perfoliate Shepherds-purse. Thlaspi alpestre. Huds. ed. ii. Stone pits between Witney and Burford, and on Burford Downs, Oxfordshire. A. April.

monta'num. T. Pouches inversely heart-shaped: leaves smooth; root-leaves battledore-shaped, very entire: stem-leaves embracing the stem: petals longer than the calyx.

Jacq. austr. 237–*Cal. ecphr.* 276. 1–*J. B.* ii. 926–*Tabern.* 852. 1–*Ger. em.* 268, *right hand fig.*–*Clus.* ii. 131. 2.

Root creeping. RAY. *Root-leaves* large, smooth, tapering down into leaf-stalks. Mr. WOODWARD. *Seeds* only 1 or 2 in each cell. E. bot. *Flowers* large, white. *Anthers* yellow.

Thlaspi foliis Globulariæ. Ray. *Syn.* 305. 4. In pastures about the ebbing and flowing well, a mile from Settle in Yorkshire, towards Ingleborough; also in many places of the mountainous pastures between Settle and Malham. RAY. I found it on the road from Settle to Malham, within about half a mile of the Tarn. CURT. [On Ingleborough. WOODWARD.]

P. June, July.

T. Pouch inversely heart-shaped: leaves glaucous, somewhat toothed, embracing the stem: petals as long as the calyx: seeds numerous. alpes'tre.

E. bot. 81–*Clus.* ii. 131. 3–*Tabern.* 854. 19–*Ger. em.* 268. 7. *Ger.* 210. 7–*Park.* 837. 8–*Thlaspi perfoliatum minus.* Ray *Syn.* 305. 6.

Root leaves forming a tuft. *Stem* single, central, flowering early; other lateral stems afterwards shoot up, flowering later. *Petals* white, about the length of the calyx. *Anthers* purplish. *Seeds* 3 or 4 in each cell. E. bot. Dr. Smith observes, that Mr. Hudson's T. montanum is certainly the T. alpestre of Linn. and that his T. alpestre is the T. perfoliatum of Linn. Adding, and justly too, that the Bótan. Arr. ed. ii. misled by this authority, had still further increased the confusion.

The present arrangement of these articles has been made without any view to Mr. Hudson's opinions, and are founded on the indisputable veracity, and well known accuracy of Ray, who, in his Synopsis, p. 305, No. 4 and 6, records two species, referring to the same figures which Linnæus in the Sp. Pl. has quoted to the Thl. montanum, and Thl. alpestre, so that I must believe that Ray had seen both those species. He also particularly notices the creeping root of the T. montanum, a circumstance so inapplicable to the T. alpestre, that Dr. Smith is obliged to suppose this to be a mistake.

I am ready to allow that the Oxfordshire plants of Bobart, may be the T. perfoliatum, but think it highly probable that those of Merret and Nicholson must have been the true T. alpestre, or else Ray and Linnæus would hardly have agreed in quoting the same synonyms.—Pastures above the ebbing and flowing well, 2 miles from Gristlewick, in stony ground among the grass. Yorkshire. MERRET. On most limestone pastures in Westmoreland and Cumberland, NICHOLSON. Limestone rocks at Matlock. Dr. SMITH.

B. July.

Bursa pasto'ris. T. Pouches compressed, triangularly inversely heart-shaped, smooth, without a border: root-leaves wing-cleft.

Ludw. 186–*Curt.*–*Blackw.* 5–*Walc.* 5–*Dod.* 103. 1–*Lob. obs.* 110. 1, *and ic.* i. 221. 1–*Ger. em.* 276. 1–*H. ox.* iii. 20. *row* 1. 2–*Pet.* 49. 4, 5, 6, *and* 7–*Ger.* 214. 1–*Fuchs.* 611–*Trag.* 215–*J. B.* ii. 936–*Lonic.* i. 139. 1–*Park.* 866. 1–*Matth.* 569.

Root-leaves, sometimes entire. Sr. In cultivated ground the segments broader, on walls and in dry situations more deeply divided, and the segments much narrower. Curt. *Leaves* fringed with fine hairs; *stem-leaves*, the upper entire, strap-spear-shaped, embracing the stem. *Bunches* long, flatted at the top, terminating. *Calyx* hairy. *Petals* entire, white. *Summit* circular, fringed, concave. *Anthers* a little woolly. *Germen* egg-shaped, compressed, with a channel down the middle.

Shepherds-Purse. Shepherds-Pouch. Among rubbish, road sides, walls, cornfields, gravel walks. A. March—Sept.

This plant is a strong instance of the influence of soil and situation, for it grows almost every where, and sometimes is not more than 2 inches high when it flowers and perfects its seeds; whilst in other situations it attains the height of 2 or 3 feet. Linn. The plants of this genus begin to flower long before they have attained their full size, the flowers at first forming a corymbus, but this after a while shoots out and assumes the form of a long spike-like bunch. The stem also, at first simple, in time becomes branched, the first branches issuing from its upper part.

COCHLEA'RIA. *Pouch* notched at the end, turgid, rough, many-seeded; valves bulging, blunt.

officina'lis. C. Root-leaves heart-circular; stem-leaves oblong, a little indented: fruit globular.

E. bot. 551–*Kniph.* 3–*Ludw.* 133–*Fl. dan.* 135–*Blackw.* 227–*Woodv.* 29–*Pet.* 49. 1–*J. B.* ii. 942–*Dod.* 594. 1–*Lob. obs.* 156. 4, *and ic.* i. 293. 2–*Ger. em.* 401. 1–*Park.* 283. 2–*H. ox.* iii. 20. 1–*Ger.* 324. 1.

Root-leaves kidney-shaped, entire, veined, on long leaf-stalks; *stem-leaves* oblong, sitting, slightly toothed, and in a mountain specimen much larger than the root-leaves. *Fruit-stalks* long, slender, expanding, sometimes bent back. *Pouch*, style hardly discernible. Mr. Woodward. *Stem* angular. *Root-leaves* on long leaf-stalks, heart-kidney-shaped, fleshy; *stem-leaves* sitting, sometimes halberd-shaped, the lower sometimes on short broad leaf-stalks. *Petals* fleshy, clear white; *claws* greenish. *Pouch*

either not notched at the end or scarce sensibly so, sometimes pointed by the style; smooth; *partition* double. *Seeds* rough.

Scurvy-grass. Scrooby-grass. Sea shores, common, also on inland mountains in Derbyshire, Yorkshire, Scotland, and Wales. A. April, May.*

Mr. Hudson considers the C. groenlandica as only a var. of this, and as far as appears from the specific character, the C. danica may be nothing more, so great are the changes to which it is subject; but the following metamorphosis of this Proteus-like plant, is more extraordinary than any other thing of the kind which has occurred to my observation.

Root woody, sending out fibres.

Stem none.

Leaf-stalks lying close on the ground, springing from the crown of the root, very slender, about 1 or 1½ inch long.

Leaves smooth, entire, varying from circular to heart-shaped, sometimes with a single indentation on each side, about ⅛ of an inch in diameter.

Fruit-stalks from the crown of the root, very slender, leafless, 1 to 1½ inch long, supporting a single flower.

Bloss. petals reflected, very much larger than the calyx, of a bright rich lilac-colour, streaked with deeper purple lines.

Pouch circular heart-shaped, 2-celled, with 4 rough seeds in each, placed alternately, on short pedicles.

This elegant little plant grows in a rich soil in various places about Lisbon, but more particularly on the shores of the Tagus; flowering in January and February, and I never saw it there assume any other appearance, so that concluding it to be a Cochlearia I fully concurred in opinion with my good friend the Abbé Correa that it was a species unknown to the Linnæan School. Some seeds sown in my garden at Edgbaston in the Autumn of 1793, produced plants which flowered in March 1794. These agreed in every respect with the Portugal plants. In April the colour of the petals was more dilute, the whole plant larger, and much resembling the Cochl. danica fig. in the Fl. dan. t. 100. In the month of May the petals became entirely white, and much smaller than those which had flowered in March: the flowers formed a corymbus, the stems grew to a foot or more in height,

* Notwithstanding this is a native of the sea coast, it is cultivated in gardens without any sensible alteration of its properties. It possesses a considerable degree of acrimony, and this acrimony seems to reside in a very subtile essential oil. Its effects as an anti-scorbutic are universally known; and it is a powerful remedy in the pituitous asthma, and in what Sydenham calls the scorbutic rheumatism. A distilled water, and a conserve, are prepared from the leaves, and its juice is prescribed along with that of oranges, by the name of anti-scorbutic juices. It may be eaten as a sallad. Cows eat it. Horses, goats, and sheep refuse it.

bearing angular leaves, and in every respect corresponding with the ordinary C. officinalis.

dan'ica. C. All the leaves trowel-shaped, with halberd-shaped angles at the base.

E. bot. 696–*Fl. dan.* 100–*Lob. obs.* 338. 1, *and ic.* i. 615. 2–*Ger. em.* 271–*Park.* 848. 1–*J. B.* ii. 939. 2–*H. ox.* iii. 20. 3–*Pet.* 49. 3.

Stem not branched as in *C. officinalis*. *Suckers* trailing. All the *leaves* halberd-shaped, or egg-shaped, with an angle on each side of the base. *Leaf-stalks* not toothed at the base, or embracing the stem. *Capsules* egg-shaped. LINN. *Stems* numerous. Mr. WOODWARD. *Bloss.* white.

Thlaspi hederaceum. Ger. em. 271. Park. 848. (ST.) *Danish Scurvy-grass.* Sea shores. Isle of Walney, Lancashire, and near Llanbadrick church, Anglesea. RAY. [Wells, Norfolk. Mr. CROWE.] A. May, June.

groenlan' dica. C. Leaves kidney-shaped, entire fleshy.

Barth. act. iii. *t.* 144.

Root-leaves very small, underneath very convex and fleshy, without veins, very entire, on long leaf-stalks. LINN. The *Cochlearia* which grows on the mountains of Wales, Derbyshire, Yorkshire, and Westmoreland, of which I have have now plants in my garden from Wales and Craven, yearly sow themselves, and have continued the same for above 10 years. RICHARDSON in *R. Syn.* The same is confirmed in Mr. Sherard's garden at Eltham. DILL. *ib.* Miller also, who from his manner of speaking appears to have cultivated it, speaks of it as a distinct species, and says it is biennial, but that the *C. officinalis* is an annual. ST. From the specimens I have seen, I suspect it to be only a starved variety of *C. officinalis*. LIGHTF. My specimens above mentioned seem to answer equally to the descriptions of C. *groenlandica* and *officinalis*, except that the *leaves* are veined. Mr. WOODWARD. From such differences in opinion, whatever may be the real plant of Linnæus, I am inclined to suspect that ours is only a mountainous variety of the C. officinalis.

In reply to some enquiries sent to Mr. Griffith, he favoured me with the following observations: "The Cochlearia groenlandica is certainly not an annual. I cultivated it 3 or 4 years, during which time it retained its diminutive state, which gave me reason to suppose it distinct from the C. officinalis; but I have since repeated the experiment, and it became as large as the Cochl. officinalis."

Mountains of Caernarvonshire; about Llanberys, plentifully. HUDS. Mountains near Settle. CURT.

A. LINN. HUDS. B. MILL.

C. All the leaves egg-spear-shaped. an'glica.

E. bot. 552–*Fl. dan.* 329–*Blackw.* 218–*Dod.* 594. 2–*Lob. obs.* 157. 1, *and ic.* i. 294. 1–*Ger. em.* 401. 2–*Park.* 285. 1.–*H. ox.* iii. 20. *row* 3. 2–*Ger.* 324. 2.

The root-leaves are generally entire, the stem-leaves generally indented, but sometimes they are all entire, or all indented, though I believe the primary root-leaves are always entire. *Pouches* roundish, fleshy, much larger than those of *C. officinalis*, and terminated by a longer style about 2-3ds of a line in length. WOODWARD.

Spoonwort. English Scurvy-grass. Sea shores, in muddy soil. Salt marshes, Kent and Essex, where the salt water overflows it every tide. MILL. [At Yarmouth, Mr. CROWE, and on the coast abundantly. Mr. WOODWARD. Isle of Wight, and King's Weston. ST. River banks near the Hotwells, Bristol. Mr. SWAYNE.] A. or B. May.

C. Leaves wing-cleft: stem depressed. Coro'nopus.

Fl. dan. 202–*Blackw.* 120–*Ger.* 340. 2–*Dod.* 110–*Lob. obs.* 240. 1, *and ic.* i. 438. 1–*Ger. em.* 427. 2–*Pet.* 50. 6–*H. ox.* iii. 19. 9–*Tourn.* 102–*J. B.* ii. 919. 2–*Matth.* 851–*Park.* 502. 5–*Park.* 502. 2.

Stem and *root-leaves* prostrate, longer than the branches; *leafits* cut along the fore edge, very entire along the back edge, the terminating one strap-shaped, very entire. *Pouch* kidney-heart-shaped, depressed on the sides, with furrows and sharp ridges running towards the edge, where they run out into sharpish points; one of the cells not unfrequently empty, in which case the fertile seed expands, filling up almost the whole of the seed-vessel. In this last respect it accords with the *Myagrum*. ST. *Bunches* from the bosom of the leaves. *Bloss.* white.

Swines Cress. Scurvygrass. Cornfields; rubbish; road sides. A. June—Aug.

C. Root-leaves spear-shaped, scolloped: stem-leaves snipt. Armora'cia.

Woodv. 150–*Blackw.* 415–*Fuchs.* 660–*J. B.* ii. 852–*Lonic.* i. 160. 1–*Trag.* 734–*Dod.* 678. 1–*Lob. obs.* 173, *and ic.* i. 320. 1–*Ger. em.* 241. 1–*Park.* 860–*Pet.* 49. 11–*Ger.* 187. 1–*Matth.* 442–*H. ox.* iii. 7. *row* 3. 2.

Var. 2. Root-leaves deeply wing-cleft. ST.

Pet. 49. 12.

Flowers white.

Horse-radish. Sides of ditches, banks of rivers. About Alnwick, Northumberland; banks of Skipton-beck, and elsewhere in Bolland, in Craven. RAY. P. May.*

C. *didyma.* See Lepidium *didymum.*

IBE'RIS. *Bloss.* unequal, the two outer petals larger: *pouch* roundish, compressed: *partition* placed crosswise; 1 seed in each cell.

ama'ra. I. Herbaceous: leaves spear-shaped, acute, somewhat toothed: flowers in bunches.

E. bot. 50. 2–*Kniph.* 9–*Riv. tetr.* 109, *Thlaspid. fol. Nasturtii–J. B.* ii. 925. 1–*Ger.* 205. 6–*Ger. em.* 263. 5, *on the right hand.*

Similar to *I. umbellata,* (the common Candytuft) but smaller. LINN. *Leaves* strap-spear-shaped, generally with 1 or 2 teeth on each side. *Flowers* in a terminating spike-like bunch; white.

Bitter Candytuft. Cornfields about Henley, and other places in Oxfordshire. HUDS. Common about Wallingford, Berks. Dr. SMITH. [Road side between Cheadle and Oakmoore; on a common. Rev. J. H. DICKENSON.] A. June, July.

nudicau'lis. I. Herbaceous: leaves wing-cleft: stem naked, simple.

Dicks. h. s.–Curt.–Dod. 103. 2–*Lob. ic.* i. 221. 2–*Ger. em.* 276. 2–*Park.* 866. 3–*J. B.* ii. 937. 1–*Pet.* 50. 2–*Fl. dan.* 323–*Ger.* 194. 3–*Ger. em.* 251. 4–*Park.* 828. 7–*Magn. bot.* 187–*H. ox.* iii. 19. 5.

Stems numerous, with usually one sitting leaf below the middle. *Root-leaves* spread on the ground in a circle, smooth, with winged clefts, the terminating lobe large. *Pouches* somewhat convex on one side, flat on the other, bordered with a projecting margin, and marked with a perpendicular line, which is the edge of the partition. WOODWARD. From 2 to 4 inches high. *Leaf-stalks* as long as the leaves. *Flowers* small, white, in a terminating spike-like bunch.

Rock Cress. Naked candytuft. Gravelly places and very barren heaths. Near Hampton Court, Richmond and Barnes

* The root scraped is in common use at our tables as a condiment for fish, roast beef, &c. and it is used for many other culinary purposes. An infusion of it in cold milk, makes one of the safest and best cosmetics. In paralytic and dropsical cases it is an useful stimulant and diuretic. A strong infusion of it excites vomiting. A distilled water is prepared from it. Horses, cows, goats, sheep, and swine refuse it. The *Papilio Brassicæ* feeds upon the several species.

Commons. RAY. Putney Heath. MILL. Old stone pits by the side of Pensham Field, Worcestershire. NASH. [About Norwich, frequent. Mr. PITCHF.—and Bungay, Suffolk. Mr. WOODW.—Between Corby Castle and Carlisle. ST. Harmer Hill, near Salop. Mr. AIKIN.] A. May—July.

SILIQUOSA.

DENTA'RIA. *Pod* cylindrical, bordering, opening with a jerk: valves rolling back, rather shorter than the sponge-like partition: *summit* notched: *calyx* close.

D. Lower-leaves winged; the upper ones undivided. bulbi'fera.

E. bot. 309–*Fl. dan.* 361–*Clus.* ii. 121. 1–*Lob. ic.* i. 687. 2–*Ger. em.* 984. 1–*Park.* 620. 1–*Ger.* 833. 1.

Bulbs produced from the bosom of the leaves as in the *Lilium bulbiferum*, and the fruit in the like manner abortive. LINN. *Stem* simple. *Leaves*, the lower with 3 pair of leafits, and an odd one confluent with the pair beneath; leafits bluntly spear-shaped, serrated. *Flowers* flesh-coloured. *Bulbs* from the bosom of the upper leaves, scaly, which falling off take root, and produce new plants. It rarely produces seeds. Mr. WOODWARD. *Bulbs* black.

Bulbed Coral-wort. Woods and shady places, Highreede and Foxholes Woods near Mayfield, Sussex. PARK. Old Park Wood, near Harefield. BLACKST. Woods between Beconsfield and Wickham. HUDS. P. April, May.

CARDAM'INE. *Pod* long, 2-edged, opening with a jerk: *valves* rolling back, parallel to the membranaceous partition: *summit* a knob, entire: *calyx* rather open.

(1) *Leaves undivided.*

C. Leaves egg-shaped, very entire, on long leaf-stalks. bellidifo'lia.

Fl. dan. 20–*Jacq. misc.* i. 17. 2–*Fl. lapp.* 9. 2.

Root-leaves on leaf-stalks. In its larger growth there are leaves on the stem, but rarely with leaf-stalks. Flowers white.

Daisie-leaved Lady smock. Cardamine pumila Bellidis folio. Ray Syn. 300, though not now to be found at St. Vincent's rocks. And Mr. Griffith informs me that the Arabis stricta now grows in the places near Denbigh where the Cardamine was said to grow. The specimens before me were gathered wild in Scotland, and sent me by Mr. MILNE. P.

petræ'a. C. Leaves oblong, toothed.

Fl. dan. 386–*Dill. elth.* 61. 71–*Lightf.* 15. 2, *at p.* 347–*Pet.* 50. 3.

Stem unbranched. *Bloss.* white.

Mountain Ladies smock. [Lofty rock in Caernarvonshire, as Moelyn-rhud near Phestiniog, y Clogwyn, du yn yr Arddu Glogwyn, y Carnedh near Llanberys; and on moist rocks above the Lake Layn-du. Clogwyn du yn yr Arddes. *R. Syn.* In great plenty. Mr. GRIFFITH. By the 1st mile stone from Shrewsbury to Welsh Pool. Mr. AIKIN.] P. May—July.

(2) *Leaves winged.*

impa'tiens. C. Leaves winged; leafits spear-shaped, toothed or cut: stipulæ fringed. (E. bot.)

E. bot. 80–*J. B.* ii. 886. 1–*Barr.* 155–*Ger. em.* 260. 7–*Park.* 1241. 4–*H. ox.* iii. 4. 1–*Pet.* 47. 7–*Barr.* 155.

Stem seldom branched. *Leafits* of the upper leaves nearly entire, of the middle ones toothed, of the lower ones considerably cut and jagged. *Stipulæ* crescent-shaped, half embracing the stem. *Petals* small, white, deciduous; sometimes wanting.

Impatient Ladies smock. Mountainous meadows on the sides of rivulets, on rocks and moist stony places, in Derbyshire, Yorkshire, and Westmoreland. Giggleswick Scar. [Rocks opposite Matlock Bath, Derbyshire. Mr. WOODWARD. On loose earth thrown up from a quarry above Lench Ford, nearly opposite Shrawley, and in Cliffy Wood near Hanley, Worcesters. ST.] A. May, June.

hirsu'ta. C. Leaves winged, leafits opposite: stamens 4.

E. bot. 491–*Cam. epit.* 270–*Scop.* 38, *at* ii. *p.* 21–*Barr.* 455–*J. B.* ii. 888.

Stems generally numerous, the central one upright, the rest declining, hairy. *Root-leaves* very numerous, forming a circle on the ground; *leafits* roundish, 3 or 4 pair, with an odd one much larger; *stem-leaves*, 2 or 3 on each stem, roundish or spear-shaped. Mr. WOODWARD. *Stems* from 3 to 5 inches high. *Leafits* opposite, mostly 3 pair, the odd one at the end larger and more circular.

Cardamine hirsuta β HUDS. *Cardamine minor arvensis. D. Lhwyd,* in R. Syn. 300 n. 4.—(*Cardamine impatiens altera hirsutior.* R. Syn. 300, is *C. flexuosa.*) *Hairy-leaved Ladies smock.* [Gravelly soil, on the driest banks as well as in moist places and by the sides of rivulets and springs. Common in

Cornwall. Mr. GIDDY and Mr. STACKHOUSE; and in Scotland. Dr. HOPE. Warwickshire and Staffordshire, common.]

A. March—June.*

C. Stem zigzag: leafits toothed, mostly alternate, unequal at the base. flexuo'sa.

Curt. 277–Fl. dan. 735–Walc. C. hirsuta.

STEM 8 to 12 inches high; stiff, angular, ribbed, zigzag, being bent at the setting off of every leaf or branch.

LEAVES: *Root-leaves* lying in a circle on the ground, on leaf-stalks. Leafits 5 or 6 pair, with an odd one at the end: egg-shaped, irregularly toothed, unequal at the base. *Stem-leaves* alternate, irregular sitting. *Leafits* 3 to 5 pair, with an odd one which is larger; some sitting, some on short leaf-stalks, irregularly toothed.

FRUIT-STALKS cylindrical, but compressed; slanting.

CALYX half the length of the blossom: generally purplish.

BLOSS. Petals white, rounded at the end.

STAMENS 6, longer than the blossom. Anthers yellow.

PIST. Summit pale green.

S. VESS. Pod straight, nearly upright, cylindrical, but compressed.

SEEDS 6 on each side of the partition.

PLANT somewhat hairy; hairs few, soft, white, mostly on the lower part of the stem and the edges of the leaves. *Flowers* in a terminating corymbus, which in time shoots out in form of a spike-like bunch; and the full grown plants sometimes put forth axillary bunches.

This plant has been supposed by some to be only a var. of the C. hirsuta, but it has more generally been taken for the C. parviflora of Linnæus, whilst others have supposed those two species only accidental varieties. It differs from the former in having uniformly 6 stamens, and from the latter in being hairy, in its stamens being longer than the blossom, and in its fruit-stalks being slanting upwards, not horizontal. It does not appear that the C. parviflora has yet been found in our Island.

Zigzag Ladies smock. C. *parviflora.* Bot. arr. ed. ii. *Cardamine hirsuta.* WEBER, CURTIS, WALCOT, HUDS. *Car-*

* The young leaves are a good sallad. It is pretty warm in the mouth, much resembling Water Cress in taste. ST.

damine impatiens altera hirsutior. R. Syn. 300. Ditches, woods, shady, wet, and boggy places. [Rookery at Edgbaston, and in ditches at the tail of the Pool.] A. May—July.

praten'sis. C. Leafits of the root-leaves roundish, those of the stem-leaves spear-shaped; very entire.

Curt. 175–*E. bot.* 776–*Kniph.* 12—*Fl. dan.* 1039–*Woodv.* 30–*Walc.*–*Sheldr.* 109–*Blackw.* 223–*Lob. obs.* 106. 2, *and ic.* i. 210. 1–*Ger. em.* 259. 1–*Ger.* 201. 1–*Clus.* ii. 128. 2–*Dod.* 592. 2–*Lob. obs.* 106. 3, *and ic.* i. 210. 2–*Ger. em.* 259. 2–*Ger.* 201. 2–*Park.* 826. 2, *and* 1239. *f.* 4–*H ox.* iii. 4. 7–*Pet.* 47. 5–*Lonic.* i. 159. 5–*Fuchs.* 325–*J. B.* ii. 889. 1–*Trag.* 83. 1.

Leafits of the lower stem-leaves egg-shaped, higher up spear-shaped, those of the upper strap-shaped. WOODWARD. *Flowers* large, paler or deeper purplish red.

Common Ladies smock. Meadows and moist pastures. P. A. May.*

Var. 2. Double flowered.

This is a beautiful plant in the garden, and is viviparous. [Meadows about Ross Hall, near Salop. Mr. AIKIN. In a field S. W. of the Tap-house at Hagley, Worcestersh.]

ama'ra. C. Leaves winged: suckers from the bosom of the leaves. LINN. Leafits of the stem-leaves angular, sitting. ST.

Curt. 158–*Allioni.* 56. 1–*Herm. par.* 203—*J. B.* ii. 885–*C. B. pr.* 45. 1–*Park.* 1239. 3–*Pet.* 47. 1.

Anthers purple, not yellow as in C. pratensis. LINN. *Stem* angular, strong, and almost woody. *Suckers* round, crooked. *Leafits* irregularly indented, and thinly set with little teeth. *Bunches* terminating and lateral. *Flowers* white.

* The virtue of the flowers in hysteric and epileptic cases, was first mentioned by Ray, in his letters, published by himself; and since then by Dr. Baker in the *Med. trans.* i. 442. The dose is from 20 to 90 grains twice a day. Do they not act like the *Erysimum cheiranthoides* in the epilepsies of children, and cure the disease by destroying the worms in the stomach and intestines, which were the cause of the fits? I have accounts of their success in young epileptics, from good authority; but have never been fortunate enough to see them of much use in hysterical cases. Whilst in Cornwall in the year 1793, I had the pleasure of meeting with the Rev Mr. Gregor, who told me that the flowering tops of the Ladies smock had been successfully used by his family for some generations in the cure of epilepsies, and some cases he mentioned to me were not likely to have been owing to worms. Our medical people have only used the flowers, but Mr. Gregor's family use the flowering tops. Can this account for the different success? Goats and sheep eat it. Horses and swine refuse it. Cows are not fond of it.

Bitter Cresses, or Ladies smock. Near purls of water, rivulets, on the banks of rivers, boggy places, and moist meadows and pastures. Dorking, Surry; Braintree, Essex; Middleton, Warwickshire; Lewisham, Harefield, Uxbridge, Battersea, Chelsea: and G. Comberton, Worcestershire. [Norwich. Mr. CROWE. Bungay, Suffolk. Mr. WOODWARD. About Worcester. St. Aston, near Birmingham.] P. April, May.*

SISYM'BRIUM. *Pod* cylindrical, opening; valves straightish, about the length of the partition: *calyx* and *bloss.* expanding.

(1) *Pods declining; short.*

S. Leaves winged; leafits egg-shaped. Nastur'tium.

Fl. dan. 690–*E. bot.* 855–*Woodv.* 48–*Fuchs.* 723–*J. B.* ii. 884–*Trag.* 82. 2–*Dod.* 592. 1–*Lob. obs.* 105. 3, *and ic.* i. 209. 1–*Ger. em.* 257. 5–*Park.* 1239. 1–*H. ox.* iii. 4. 8–*Pet.* 47. 2, *and* 3–*Matth.* 487–*Lonic.* i. 114. 2–*Blackw.* 260.

Bloss. white, terminating.

Common water-cresses. Springs, brooks, and rivulets. B. June, July.†

S. Pods oblong-egg-shaped, or cylindrical: leafits spear-shaped, serrated. sylves'tre.

Curt. 153–*Kniph.* 12–*Ger.* 190–*Ger. em.* 248. 6–*Park.* 1242–*Pet.* 46. 5–*H. ox.* iii. 6. 17–*Fuchs.* 263–*J. B.* ii. 866. 2.

Root creeping very remarkably. *Leafits* of the root-leaves somewhat egg-shaped, those of the stem leaves spear-shaped. *Flowers* small, yellow. *Pedicles* declining. *Bloss.* a little longer than the cup. *Nect. glands* 4, in a circle. *Seeds* generally abortive, it increasing so considerably by the root. Mr. WOODWARD. *Stem* and *fruit-stalks* zigzag. *Pods* with us nearly cylindrical, probably because the seeds do not ripen, but

* Sheep eat it. Cows are not fond of it. LINN. The young leaves are acrid and bitterish, but do not taste amiss in sallads. LIGHTF. They are much used for that purpose in Lancashire. Mr. CALEY. The leaves are pungent, bitter and aromatic, in such a degree as to promise very considerable medical uses. The *Papilio Cardamine* lives upon the different species.

† This is very universally used as an early and wholesome spring sallad. It is an excellent anti-scorbutic and stomachic, with less acrimony than the Scurvy-grass. It is an ingredient in the anti-scorbutic juices.

when they do the pod assumes an oblong-egg-shaped figure as Linnæus describes it.

Creeping Water Cress. Water Rocket. Marshy and watery places, and banks of rivers. Banks of the Thames, [of the Aire below Leeds. Mr. Woodw. Near Bungay, Suffolk, the only place in Norfolk and Suffolk where it has been hitherto found. Mr. Woodward. On the banks of the Severn, near Worcester. St.] P. June, July.

amphib'ium. S. Pods oblong-egg-shaped: leaves wing-cleft, serrated: petals longer than the cup.

Water Radish. Radish Water-cress. Watery places, and banks of rivers. P. June—Aug.

1. Leaves simple, toothed-serrated. Linn.

Kl. dan. 984–*Kniph.* 12–*C. B. pr.* 38. 1–*Park.* 1229. 2–*Pet.* 49. 8–*H. ox.* iii. *t. row* 3. 4–*Ger.* 180–*Ger. em.* 234. 2.

When growing in water of some depth the *leaves* below the surface strap-shaped, winged, nearly like those of the *Hottonia*, those above spear-shaped, serrated. Linn. *Stem* upright, branched. *Leaves* spear-shaped, variously toothed, smooth, half embracing the stem. *Fruit-stalks* much longer than the pods, and much longer than in the *S. terrestre*. *Pod* oblong, very short, smooth, at first expanding, afterwards hanging down. Mr. Woodward. *Stem* smooth, scored, crooked at the joints. *Leaves* egg-spear-shaped, scolloped and set with little teeth at the edge, with often from 1 to 3 winged clefts at the base. *Leaf-stalks* semi-cylindrical, channeled above. *Fruit-stalks* while in flower about $\frac{1}{2}$ an inch long, and upright, but afterwards bending back and pointing downwards. *Flower*, the whole yellow.

Sisymbrium amphibium aquaticum β Linn. *S. aquaticum.* Pollich. *Radicula sylvestris seu palustris.* R. Syn. 301. (St.) [In the Foss at York. Mr. Wood.—Side of the river and wet ditches at Tamworth, and of the Severn near Worcester. St.]

Var. 2. Leaves deeply wing-cleft.

Kniph. 3–*Ger.* 185. 2–*J. B.* ii. 867. 2–*Pet.* 49. 10–*Lob. ic.* i. 319–*Ger. em.* 240. 2–*Park.* 1228. 1.

Leaves, the clefts extending nearly to the mid-rib, segments spear-strap-shaped, pointed, generally very entire, or with 1 or 2 saw-like teeth. Merely a variety growing with that with entire leaves, and having intermediate specimens with leaves pretty deeply cut and serrated, as in Lob. and its copies. St.

Sisymbrium amphibium terrestre γ LINN. on the authority of the figures referred to by Vaill.*

S. terres'tre. Root annual: leaves wing-cleft: pods full of seed: petals shorter than the cup.

Curt. 289–*Fl. dan.* 931–*J. B.* ii. 867. 1–*C. B. pr.* 38. 2–*Park.* 1228. 1. *f.* 2–*H. ox.* iii. 7. *row* 3. 3–*Pet.* 49. 9.

Leaves, segments confluent with the mid-rib, often pointing backwards, alternate, or in pairs, elliptical, or egg-shaped, serrated, or toothed here and there. HALL. *Petals* yellow, blunt, very entire, somewhat shorter than the cups.

Sisymbrium amphibium palustre. LINN.—S. *palustre.* POLLICH. *Annual Water-cress.*

The S. *islandicum* with lyre-like winged leaves, the leafits oval and toothed, figured in Fl. dan. 409, approaches very nearly to this, but the leafits are not confluent with the mid-rib.

Edges of wet ditches, and on ground apt to be occasionally overflown in the environs of London, as Tothil-fields, and between the Magdalen Hospital and Lambeth Marsh. CURT.—[Bungay Common, Suffolk. Mr. WOODWARD.—Near Stafford, on the road to the Castle-hill. ST.] *A.* June.—Sept.

(2) *Stem naked, or nearly so.*

S. tenuifo'lium. Leaves smooth, nearly entire; the lowermost once or twice pinnatifid; the uppermost undivided. (E. bot.)

E. bot. 525–*Curt.*

Very much branched from the root. *Leaves* with nearly winged clefts. Mr. WOODWARD. *Stem* 1½ foot high, upright, cylindrical, woody at the base. *Leaves* with winged-clefts and jagged, smooth, expanding, of a disagreeable scent. *Cal.* 2 of the leaves almost upright; 2 bulging at the ends, bent back; before the blossom is expanded appearing as if tipped with 2 horns from the projecting points of 2 of the leaves, which are beset with 1 or 2 hairs. *Petals* of the larger size, twice as large as the calyx, yellow, with claws. *Style* very short. *Pods* 1½ inch long, round, marked with a prominent line on each side. *Seeds* egg-shaped, slightly compressed. CURT. *Leaves*, segments of those with winged clefts strap-shaped-oblong, expanding, toothed, and sometimes quite entire, the terminating one broader, spear-shaped, indented. ST.

We are indebted to the accurate researches of Dr. Smith for

* Ends of the *general fruit-stalks* often swoln into a cauliflower-like substance, purplish, and containing small grubs of the same colour. ST. Cows refuse it. Sheep and goats are not fond of it.

rescuing this plant from its former improper situation among the Brassicæ, and placing it with its congeners, the Sisymbria.

Sisymbrium tenuifolium. LINN. *Brassica muralis.* Bot. arr. ed. iii. *Wild Rocket.* RAY. *Wall Cabbage.* Old walls and rubbish. Walls of Yarmouth. RAY. [Mr. WOODWARD.] Chester, Taunton Castle, Lichfield Close, Berwick, &c. RAY; and about London, Bristol and Exeter. HUDS. [London Bridge. Mr. JONES. Near Sunderland, and about Tinmouth Castle, abundantly, Mr. ROBSON. May—June.*

monen'se. S. Leaves between winged and toothed, somewhat hairy: stalks smooth. See Brassica *monensis*.

(3) *Leaves compound or winged.*

So'phia. S. Petals smaller than the cups: leaves doubly compound-winged.

Ludw. 73–*Fl. dan.* 528–*Sheldr.*–*Kniph.* 6–*Dod.* 133. 2–*Lob. obs.* 426. 1, *and ic.* i. 738. 2–*Ger. em.* 1068–*Park.* 830. 3–*Pet.* 46. 12–*Fuchs.* 2–*J. B.* ii. 886. 2–*Trag.* 338–*Ger.* 910. 1 *and* 2–*Lonic.*

Pods long, stiff, and crooked. *Seeds* yellow. *Blossoms* yellow. *Flix-weed Water-cress.* Walls and among rubbish. A. July.†

Trio. S. Leaves notched, toothed, naked: stem smooth: pods upright.

Jacq. austr. 322–*Curt.* 311–*Park.* 834. 4–*H. ox.* iii. 3. *row* 3. 3–*Pet.* 46. 4–*Col. ecphr.* 265.

Stem nearly smooth. *Leaves* variously toothed and cut, sometimes with winged clefts at the base, generally terminated by a long spear-shaped lobe; the upper usually simple, spear-shaped, with one or two teeth towards the base. *Pods* long, strap-shaped, upright, but not pressed to the stem. *Fruit-stalks* short. Mr. WOODWARD. *Blossoms* small, yellow.

Broad-leaved Water-cress. Old Walls and amongst rubbish. A. May. Aug.

ERY'SIMUM. *Pod* straight, strap-shaped, exactly 4-sided: *cal.* closed: *summit* a knob.

* All the parts of this plant are considerably acrid, and have a rank disagreeable smell.

† The pods retain the seeds all winter, and small birds feed upon them. The plant has been sometimes prescribed in hysteric and dysenteric cases; and the seeds are given to detroy worms. Sheep and cows eat it. Horses and goats are not fond of it. Swine refuse it.

E. Pods pressed to the spike-stalk: leaves notched. officina'le.

Curt. 326–*E. bot.* 735–*Ludw.* 187–*Fl. dan.* 560–*Woodv.* 244–*Sheldr.*–*Blackw.* 28–*Ger.* 198. 1–*Pet.* 46. 3–*Fuchs.* 592–*J. B.* 863–*Dod.* 714–*Ger. em.* 254. 1–*Trag.* 102. 1 –*Lonic.* i. 165. 1–*Lob. adv.* 69, *and ic.* i. 206. 1.

Stem cylindrical, frequently purple, particularly at the angles of the branches. *Branches* very expanding. *Pods* roundish, somewhat awl-shaped, pressed so close to the spike-stalks as to appear naked. Mr. Woodw. *Stem* hairy, branched towards the top. *Branches* ascending. *Leaves* slightly woolly, the lower winged, the upper halberd-shaped. *Calyx* about half as long as the petals. *Bloss.* yellow. *Germen* cylindrical, tapering upwards. *Summit* flat, with a shallow nick. *Pod* conical, scarce sensibly 4-cornered, hairy. *Seeds* oblong. *Flowers* in long spikes, terminating.

Hedge Mustard, or *Wormseed*. *Bank Cresses*. *Scrambling Rocket*. Under walls and hedges, road sides and among rubbish. A. May, June.*

E. Pods indistinctly 4-cornered: leaves lyre-shaped, the Barba'rea. terminating segment circular.

E. bot. 443–*Fl. dan.* 985–*Walc.*–*Ger.* 188–*Fuchs.* 746–*J. B.* ii. 869–*Trag.* 101. 2–*Lonic.* i. 165. 2–*Dod.* 712. 1 –*Lob. obs.* 104. 2, *and ic.* i. 207. 2–*Ger. em.* 243–*Park.* 820–*H. ox.* iii. 5. 11 *and* 12–*Pet.* 46. 1–*Matth.* 572.

Stems strong, with about 8 deep furrows, and as many sharp ridges. *Leaves* half embracing the stem, winged, the terminating leafit egg-shaped, notched. *Cal. leaves* in the flowers not yet expanded green, and 2 of them larger, with a helmet-shaped hollow at the top. *Pods* long, slender, somewhat cylindrical, slightly flatted, not very sensibly 4-edged. *Blossoms* yellow.

Winter Cresses. *Winter Rocket*. *Rocket Wormseed*. Walls, banks on the sides of running streams, watery places, and sometimes in cultivated fields. [Common in Devonsh. and plentiful in Launceston Castle, Cornwall.] P. May. Oct.

Var. 2. Leaves smaller, and more frequently scolloped. Ray. *Pet.* 46. 2.

* It is warm and acrid to the taste: and, when cultivated, is used as a spring pot-herb. Birds are fond of the seeds. Sheep and goats eat it. Cows, horses, and swine refuse it. By means of this herb a hoarseness, occasioned by loud speaking, was cured in 3 days, by Rondeletius. Linn. —"Juice of Hedge Mustard is beyond any thing in ulcers of the throat. "This was found by experience by the Honourable Harry Gray, Esq. "when all advice of Doctors and Surgeons availed nothing. This from "his own mouth."—Manuscript note in a copy of Parkinson which formerly belonged to Mr. Saunders, surgeon at Stourbridge.

Blossoms yellow.

If this be really an annual, as asserted by Dillenius and Petiver, it may prove distinct, but plants which grow in situations so different as the sides of streams and the rubbish of an old Castle on an elevated mount, are necessarily liable to great variations. A. Dill. Pet. Apr.*

Allia'ria. E. Leaves heart-shaped.

E. bot. 796–*Ludw.* 77–*Fl. dan.* 935–*Curt.* 144–*Kniph.* 3–*Woodv.* 245–*Walc.*–*Fuchs.* 104–*J. B.* ii. 883–*Lonic.* i. 160. 2–*Trag.* 86–*Matth.* 843–*Dod.* 686–*Lob. obs.* 285. 3, *and ic.* i. 530. 1–*Ger. em.* 794–*Park.* 112. 5–*H. ox.* iii. 10. 6–*Ger.* 650–*Pet.* 45. 1–*Blackw.* 372.

Stem cylindrical. *Leaves* bluntly and irregularly serrated, alternate, on leaf-stalks. *Flowers* in a corymbus. *Nect. glands* 4, 1 on the outside of each pair of longer stamens, and 1 supporting each of the short stamens which grow in a cavity at the top of them.

Jack-by-the-hedge. Sauce-alone. Garlic Wormseed. Hedges, ditch banks, and shady places. P. May.†

cheiranthoi'des. E. Stem very much branched: leaves spear-shaped, oblique, waved and toothed: pods expanding.

Jacq. austr. 23–*Kniph.* 11–*Fl. dan.* 923–*Lob. obs.* 112. 1, *and ic.* i. 225. 1–*Ger. em.* 273. 4–*Park.* 868. 3–*H. ox.* iii. 5. 7–*Pet.* 45. 2–*J. B.* ii. 894. 1.

Pods slightly expanding, or at a distance from, not near to the stem. *Summits* small, scarcely divided. Linn. *Seeds* oblong, yellowish brown, intensely bitter. Ray. *Stem* 1 to 2 cubits high, rough, stiff, quite straight, scored, sometimes a little branched. *Leaves* very entire, roughish, the mid-rib running down the stem, the uppermost sometimes a little toothed. *Bloss.* small, yellow. *Pods* quadrangular, standing out, but upright. Lyons. *Leaves* narrow spear-shaped.

Treacle Wormseed. Osier-holts, and banks of the river near Ely; Ashburne, Derbyshire; and cornfields about Elden, Suf-

* The common people in Sweden use the leaves in sallads, early in the spring, and late in the autumn; they also boil them as Cale. It is sown in gardens as an early spring sallad. Linn. and also in England, where it is called French Cress. Sr. Cows eat it. Horses and swine refuse it. Goats and sheep are not fond of it.

† The Prussians eat the leaves along with salted meats in the spring. They are useful with Lettuce and the colder sallads. The seeds excite sneezing. Cows and goats eat it. Horses, sheep, and swine refuse it. The *Curculio Alliaria* feeds upon it. Linn.—When it grows in poultry yards the fowls eat it, and it gives an intolerable rank taste to their flesh. In Wales it is much used as a frying herb.

folk. [Very common amongst turneps near Bungay, Suffolk. Woodward.—On Pullion Ballast Hills, near Sunderland, Durham. Mr. Weighell.] A. July.*

CHEIRAN'THUS. *Germen* with a glandular tooth on each side: *calyx* closed, 2 of its leafits bulging at the base: *seeds* flat.

C. Leaves spear-shaped, acute, smooth: branches angular: stem shrub-like. Chei'ri.

Sheldr. 12–*Kniph.* 2–*Ludw.* 157–*Walc.*–*Ger.* 371. 1–*Fuchs.* 458–*J. B.* ii. 872–*Trag.* 560–*Matth.* 877–*Dod.* 160. 2–*Lob. obs.* 179. 1, *and ic.* i. 330. 1–*Ger. em.* 456. 1–*Park.* 625. 1–*H. ox.* iii. 8. 15–*Pet.* 45. 3.

Flowers in terminating bunches, yellow; sometimes with rust-coloured or dark blood-coloured blotches.

Wall-flower. Wild Cheir. Wall Gilliflower. Old walls and roofs. P. May, June.†

C. Leaves cottony, blunt, somewhat indented; those of the branches entire: pods prickly. sinua'tus.

E. bot. 462–*Lob. adv.* 140, *and ic.* i. 330. 2–*Ger. em.* 460. 2–*Ger.* 374. 2–*J. B.* ii. 876. 1.

Whole *plant* cottony, hoary. *Stem* upright. *Root-leaves* broad, spear-shaped, alternately toothed, blunt; *stem-leaves* spear-shaped, blunt, channeled, with 2 pair of blunt teeth about the middle; *branch-leaves* entire, not toothed. *Petals* flesh-coloured, blunt, whitish at the base. *Pods* very long, cottony. Linn.

Prickly-podded Gilliflower. Sandy sea shores of Caernarvonshire, Anglesea, and Cornwall, and on the rocks at Aberdovie, Merionethshire. B. June, July.

HES'PERIS. *Petals* turned obliquely: *glands* within the shorter stamens: *calyx* closed: *pod* stiff and straight: *summit* forked at the base, approaching at the top.

H. Stem simple, upright: leaves toothed: petals blunt. inodo'ra.

* The country people give the seeds to destroy worms, and with good effect.—Horses, cows, goats, sheep, and swine eat it.

† It has found a place in our gardens, where it has produced a considerable number of varieties, but none which have a more delightful scent than the wild one. The *Phalæna meticulesa*, and *Pronuba*, feed upon it. Linn.

Jacq. austr. 347–*E. bot.* 731–*Fl. dan.* 924 *and* 921–*Rupp.* *a. Hall. at p.* 78–*J. B.* ii. 878. 2–*Clus.* i. 297. 1–*Dod.* 161. 1–*Lob. obs.* 175. 1, *and ic.* i. 323. 2–*Ger. em.* 462. 1–*Park.* 1682. 3–*H. ox.* iii. 10. *row* 1. 1.

So like H. *matronalis* as to be scarcely distinguishable but by a very experienced botanist, but the leaves are nearly halberd-shaped, with a transverse base, sharply toothed, especially at the base, softer, and not so rough. *Calyx* not coloured. *Petals* blunt, without a point. *Stamens* not projecting beyond the tube of the flower. LINN. *Leaves* roughish, and woolly on both sides, with sharp tooth-like serratures, spear-shaped, both broad and narrow. *Petals* very entire, or slightly nicked, white, flesh-coloured, purple, or purplish red; *claws* pale, longer than the calyx. JACQ. *Leaves* egg-shaped, tooth-serrated, pointed, nearly sitting: I have not seen any halberd-shaped. HUDS. *Stem* hairy. *Leaves* hairy, irregularly tooth-serrated, either sitting or on short leaf-stalks; not halberd-shaped. *Flowers* large, purplish red, in a terminating spike-like bunch; *petals* rounded at the end. *Fruit-stalks* expanding. The Sp. pl. refers the fig. of Dod. 161 to the H. *matronalis*, and that of Clus. i. 297. 1. to H. *inodora*; but these figures, being both impressions from the same block, a doubt arises whether these 2 species are really distinct, and if so, to which of them our plant belongs. Specimens which I collected in Cornwall agree perfectly well with the fig. of Jacquin and the Flora danica.

Scentless Damewort. Pastures and hedges. On the banks of the rivulets about Dalehead, Cumberland, and Grassmere, Westmoreland. RAY. [About Falmouth.]

B. LINN. and HUDS. P. for 10 years. JACQ. May, June.

A'RABIS. *Nectary*, glands 4, within the leafits of the calyx, resembling a reflected scale: *pod* long, compressed, strap-shaped, entire, and knobbed at the end.

thalia'na. A. Root-leaves spear-shaped, toothed, tapering into leaf-stalks: stem-leaves very entire; sitting.

Curt.–Fl. dan. 1106–*Pollich.* ii. *at p.* 243–*Pluk.* 80. 2–*J. B.* ii. 870. 2–*H. ox.* iii. 7. 5–*Pet.* 48. 2–*Thal.* 7. *D* –*Pet.* 48. 1–*Barr.* 269 *and* 270.

Root-leaves disposed in a circle on the ground, hairy; those of the stem nearly smooth. *Flowers* small, white. HALL. *Stem* 1 inch to more than a foot high. *Leaves*, hairs at the base simple, those on the edges and surface dividing into 2 and 3 forks. *Nectary glands* so very minute as scarcely to be discovered even with a magnifier. CURT.

Turkey-pod. Codded Mouse-ear. Walls, roofs, dry sandy pastures [and cornfields. St. . On walls near Mangotsfield, Gloucestershire. Mr. Swayne.]

A. Leaves toothed, rough with hair; those of the root spatula-shaped, those of the stem half embracing the stem, oblong: pods 2-edged, upright. Huds. — stric'ta.

Velley mar. pl.–E. bot. 614–*Crantz.* i. 3. 2.

Root branched. *Stems* several, 6 inches high, herbaceous, simple, upright, cylindrical, woolly at the base, smooth above. *Root-leaves* many, spatula-shaped, toothed, and cut-toothed, rough with hair; *hairs* long, white; *stem-leaves* 3 or 4, half embracing the stem, oblong, toothed, rough with hair. *Flowers* in bunches, large, white. *Fruit-stalks* short. *Petals* inversely egg-shaped, very entire; as long again as the calyx. *Pods* upright, quite straight, $1\frac{1}{2}$ inch long, 2-edged, 4-cornered at the base, scored. *Seeds* roundish, brown. Huds. *Glands* forming a kind of ring round the base of the stamens. Hall.

Rough Turkey-pod. Arabis thaliana. Crantz. i. 39. *Cardamine pumila Bellidis folio, alpina.* R. Syn. 300. St. *Arabis arenosa.* Scop. *n.* 837. Rocks and stony mountainous situations. St. Vincent's Rocks near Bristol, Ray. Huds. [in great plenty, Dr. Broughton and Mr. Ford.] A. May.

A. Leaves embracing the stem: pods bent backwards, flat, strap-shaped: cups somewhat wrinkled. — Turri'ta.

Jacq. austr. 11–*E. bot.* 178–*Clus.* ii. 126. 2–*Ger. em.* 272. 2–*Park.* 852. 2–*Pet.* 47. 1–*H. ox.* iii. 2. 23–*Barr.* 353.

Flowers straw-coloured. Linn. *Glands* as in *Brassica.* Mart. *Root* woody. *Root-leaves* on leaf-stalks, egg-shaped, toothed, pointed, rough with hair; *stem-leaves* oblong, toothed, cottony. *Flowers* upright, white. *Fruit-stalks* short. *Glands* within the shorter, and without the longer stamens. *Style* short, permanent. *Seeds* round, compressed. Lyons. *Stem* 1 to 2 feet high, cylindrical, scored, downy, generally simple. *Leaves* hairy on both sides; *root-leaves* oblong, thick, greyish, waved at the edge; *stem-leaves* similar, toothed, regularly decreasing upwards in size; the *upper* more pointed, rather serrated than toothed, not so grey. *Pods* very long, smooth, strap-shaped, compressed, on short fruit-stalks, rising at the base and then bent downwards, forming an elegant curve. Woodward.

Tower Turkey-pod. Old walls and stony places. [On Trinity and St. John's College Walls, Cambridge. Woodward.] A. May, June.

TURRI'TIS. *Pod* very long, angular, stiff and straight : *calyx* close, upright : *bloss.* upright.

gla'bra. T. Root-leaves toothed, rough with hair; stem-leaves very entire, embracing the stem, smooth.

Curt. 253–*Fl. dan.* 809–*E. bot.* 777–*Clus.* ii. 126. 1–*Lob. ic.* 220. 2–*Ger. em.* 272. 1–*Ger.* 212. 1–*Park.* 852. 1–*H. ox.* iii. 2. 22–*Pet.* 47. 10.

Nectary glands none. POLLICH. *Stem* 2 to 3 feet high, simple, cylindrical, slightly scored, smooth. *Root-leaves* spear-shaped, tapering into a leaf-stalk, indented towards the base, entire upwards; *stem-leaves* numerous, heart-spear-shaped, generally entire, but sometimes slightly toothed, pale sea-green. *Pods* smooth, very numerous, lying to the stem, and tiled. *Seeds* reddish brown. WOODWARD. *Pods* when fully grown cylindrical, compressed. *Bloss.* greenish white. *Bunches* long, terminating.

Tower Mustard. Smooth Towerwort. Meadows, pastures, pits, and waste places, in a gravelly soil. Near Chaleton and Lewisham, Kent; near Colchester. [Spixwort, Norfolk. WOODWARD. Lichfield. Mr. WHATELY. Castle Bromwich. Mr. JONES. Between Ashbourne and Okeover. ST. In the quarries above Bath, which is one of the habitats mentioned by Ray for his Cardamine Bellidis folio. Mr. SWAYNE. St. Vincent's Rocks, near Bristol, which, being another habitat of Mr. Ray's plant, makes it probable that his Cardamine was our Turritis glabra.] A. May, June.

hirsu'ta. T. All the leaves hispid : stem-leaves embracing the stem.

Dicks. h. s.–*E. bot.* 587–*Jacq. ic.* i.–*Walc.*–*C. B. pr.* 42. 2–*Park.* 834. 6–*Pet.* 47. 12–*H. ox.* iii. 3. 5–*Fl. dan.* 1040.

Stem rough with hair, simple, not so tall as that of *T. glabra. Root-leaves* egg-shaped, toothed; *stem-leaves* spear-shaped, blunt, toothed, half embracing the stem. *Pods* smooth, not so numerous as in *T. glabra.* WOODWARD. *Bloss.* white. *Bunches* terminating. Distinguishable from *Arabis thaliana* by the stem-leaves embracing the stem. ST. *Arabis hirsuta,* SCOP. its nectary glands corresponding with Linnæus's character of the *Arabis.* SCOP. WIGGERS.

Wall Cress. Hairy Towerwort. Rocks, stony places, old walls and castles, and dry mountainous pastures. Banks beyond Midhurst, Sussex; Switham Bottom near Croydon; about Settle, Yorkshire; King's Park, Edinburgh. LIGHTF. [Lakenham, near Norwich. Mr. CROWE. Wisbech, Bury. WOODWARD. St. Vincent's Rock, plentifully. Dr. BROUGHTON and Mr. FORD. Wick Cliffs. Mr. SWAYNE. Baydales, Darlington, Mr. ROBSON.] P. June.

BRAS'SICA. *Calyx* upright, close: *glands*, 1 between each shorter stamen and the pistil, and 1 between each pair of longer stamens and the calyx: *seeds* globular.

B. Leaves heart-shaped, embracing the stem, smooth; root-leaves rough, very entire: pods 4-cornered. LINN. *All the leaves smooth.** Syst. Veg. POLLICH. orienta'lis.

Jacq. austr. 282–*Kniph. Brassica campestris*–*J. B.* ii. 835. 4–*Clus.* ii. 127. 1–*Dod.* 626. 2–*Lob. obs.* 215. 3, *and ic.* i. 396. 2.–*Ger. em.* 536. 2–*Park.* 580. 9–*H. ox.* iii. 2. 19 *and* 20–*Pet.* 45. 5–*Ger.* 430. 2–*J. B.* ii. 835. 3.

Petals white. LINN. Too nearly allied to the *B. campestris*. HUDS. *Stem-leaves* egg-shaped, blunt at the end, heart-shaped at the base, smooth, sea-green, very entire. *Petals* white, with a tinge of straw colour. *Fruit-stalks* expanding. *Pods* 3 or 4 inches long, the lower standing wide. Specimen from Mr. Curtis's garden. WOODWARD.

Brassica campestris perfoliata flore albo. R. Syn. 293. Huds. ed. i. *Brassica Turrita.* WIGG. *Perfoliate Cabbage.* Cornfields and cliffs on the sea coast near Harwich, and Bardsey near Orford, Suffolk. RAY. Cornfields near Godstone, and Marshfield, Sussex. HUDS. A. June.

B. Root and stem slender: stem-leaves uniform, heart-shaped, sitting. campes'tris.

Jacq. austr. 282, is referred to by Hudson, and *Fl. dan.* 550. by Linnæus, but Jacquin considers his as a new species, which he calls *B. austriaca*, observing, that the angles at the base of the leaves are rounded, and not pointed, as in the fig. of the Fl. dan. He adds too, that the flowers are not in bunches as represented in that figure, but in broad-topped spikes, a few flowering at a time. Sr. Mr. Woodward suspects the reference to Fl. dan. observing, that Mr. Hudson does not cite it. (*Ger. em.* 536. 2, referred to by Hudson, is the same as *Clus.* ii. 127. 1, which Linnæus refers to B. *orientalis*. *J. B.* ii. 835. 4, is also B. *orientalis.*)

Root-leaves lyre-shaped, somewhat rough with hairs; *stem-leaves* smooth. *Blossoms* yellow. LINN. *Root-leaves* oblong,

* These contradictions render it probable that the plant given in the hort. ups. and supposed to be the B. orientalis of Tourn. cor. and our Europæan species, are distinct. Dr. STOKES.

indented, blunt, rough. *Flowers* yellow or white. Hudi. *Flowers* yellow in a garden specimen. Woodward. The only places of growth given by Hudson are those from Ray, which really belong to B. *orientalis*, to which they are above referred. Sr. Hence it is probable that we have not both species, and not unlikely that our plant may not accord well with either. I learn, however, very lately, from Mr. Pitchford, that the B. *campestris* was found by the Rev. Mr. Sutton, of Norwich, at Bradley near Orford, Suffolk. A. June.

Na'pus. B. The root a regular continuation of the stem; spindle-shaped.

Ludw. 165–*Blackw.* 224–*Walc.*–*Fuchs.* 177–*J. B.* ii. 843.–*Trag.* 730–*Lonic.* i. 191. 3–*Lob. obs.* 200. 2–*Ger. em.* 235. 2–*Park.* 865–*Pet.* 45. 9–*H. ox.* iii. 2. *row* 3. 2. *f.* 3–*Ger.* 181. 2.

Root-leaves lyre-shaped, smooth; *stem-leaves* heart-shaped oblong, embracing the stem, a little toothed. *Calyx* expanding, approaching to that of *Sinapis*. Linn. *Stem* somewhat branched, cylindrical, smooth, about 2 feet high. *Leaves* smooth, sea-green. *Calyx* yellowish green. *Summit* a flatted knob. *Pod* with frequently 3 or 4 warty excrescences, not occasioned merely by the bulk of the inclosed seeds. There is a variety with the *leaves* hairy at the edge. *Bloss.* yellow.

Wild Navew. Rape. Nape. Rape Cabbage. On ditch banks, and among corn. B. May.*

Ra'pa. B. The root a regular continuation of the stem; round, depressed, fleshy.

Blackw. 231–*Fuchs.* 212–*Trag.* 728–*Matth.* 435–*Dod.* 673. 1–*Lob. obs.* 98. 1, *and ic.* 197. 1–*Ger. em.* 232. 1–*H. ox.* iii. 2. *row* 2. 1–*Pet.* 45. 7–*Ger.* 177. 1–*Ger.* 177. 2.

Root-leaves rough, deeply indented. *Calyx* yellow. *Bloss.* yellow.

Turnep Cabbage.

Var. 2. Roots oblong.

J. B. ii. 838–*Matth.* 436–*Dod.* 673. 2–*Lob. obs.* 98. 2, *and ic.* i. 197. 2–*Ger. em.* 232. 2–*H. ox.* iii. 2. *row* 3. 2. *f.* 1–*Pet.* 45. 8.

* The roots of the cultivated variety may be eaten like the Turnep, but they have a stronger taste, and its seeds, which are called Coleseed, afford a large quantity of expressed oil, called Rape Oil. What remains after the expressing of the oil is called Oil Cake, and is used for fattening oxen. In Norfolk the cakes are broken to pieces, and strewed on the land as a manure. It is thought to be a very efficacious one, and is sold from 4l. to 6l. per ton. About half a ton is laid on an acre. Woodward. Cows, goats, and swine eat it.

Turneps. Knolles. Cornfields, and borders of cornfields. B. Apr.*

B. The root a regular continuation of the stem ; cylindrical, fleshy. — olera'cea.

E. bot. 637–*Pet.* 45. 6.

Stem-leaves very much waved, and variously indented, sea-green, with frequently a mixture of purple, the *lower* somewhat egg-shaped, sitting ; the *upper* mostly strap-shaped. *Flowers* large, yellow. *Cal.* leaves egg-shaped, broad, yellow. *Pods* short, swelling. Mr. WOODWARD. *Seeds* dusky purple.

Sea Colewort. Sea Cabbage. Common Cabbage. Cliffs on the sea coast. Dover Cliffs. RAY.—Near Harleck Cast. Merionethshire ; Penzance, and other places in Cornwall. HUDS. [Abundantly on the Sea Cliffs at Staiths, Yorkshire. Mr. ROBSON.] †

B. Leaves wing-cleft, wings cut serrated: stem nearly naked, trailing. HUDS. — monen'sis.

Lightf. 15. 1, *at p.* 347–*Pet.* 46. 7–*Dill. elth.* 111. 135, *has wing-cleft leaves, the segments very entire. It accords best with the Linn. char. and is, I suspect, a distinct*

* The roots are either eaten raw, boiled, or roasted. Pepper is commonly used with them. They relax the bowels, and are supposed to sweeten the blood. They are hurtful to pregnant or hysterical women, and to those who are subject to flatulencies. The juice, well fermented, affords by distillation an ardent spirit. The rind is acrimonious. If the roots are kept in sand, or in a cellar, during the winter, they send out white shoots and yellowish leaves, which being rather sweet and not unpleasant to the palate, are used as sallad, when other esculent plants are not to be had. But the greatest use of Turneps is in feeding oxen and sheep in the winter.

† Early in the spring the sea cabbage is preferred before the cultivated kinds ; but, when gathered on the sea coast, it must be boiled in two waters, to take away the saltness. The roots may be eaten like those of the preceding species, but they are not so tender. The different varieties of cultivated garden cabbage originate from this, all of which are much in use at our tables. The red cabbage is chiefly used for pickling. In some countries they bury the white cabbage when full grown in the autumn, and thus preserve it all winter. The Germans cut them to pieces, and along with some aromatic herbs and salt, press them close down in a tub, where they soon ferment, and are then eaten under the name of Sour Crout.—The cabbage, whilst young, is food for the Chrysomela *saltatoria*, and afterwards for the Papilio *Brassica*. The former may be kept off by strewing the ground with soot ; and it is said the latter will not touch the plants if they are whipped with the green boughs of elder. If cabbages are sowed or planted for several years together in the same soil, the heads become smaller and the roots knotty. This is occasioned by the larvæ of flies.—A horse eat the leaves, but did not seem fond of them. Sr. Cows grow fat upon them.

plant from that of Lightf. and Pet. It corresponds exactly with some of my specimens of B. muralis. ST.

Very much accords with S. *murale* in the size of the plant, leaves, flowers, and fruit. *Root* perennial. *Leaves* with almost winged clefts, being divided more than half way to the mid-rib, strap-shaped, beset with a few hairs; wings remote, bluntish, mostly 7. *Stalks* upright, smooth. *Cal.* closed. *Petals* yellow, entire. LINN. *Stems* smooth, reclining, from the centre of the leaves; 10 or 12 inches long, with commonly one leaf towards the base. *Root-leaves* with generally a few scattered hairs, especially about their leaf-stalks; *wings* 5 or 6 pair, oval, pointed, deeply indented, some alternate, some opposite, increasing in size towards the end, the terminating one larger, with 3 slight lobes, which are indented; the *stem-leaf* with strap-shaped wings, a little indented on their lower edges. *Cal.* hairy at the top. *Petals* twice as long as the calyx. LIGHTF.

Isle of Man Cabbage. Sea shores in sandy soil. Between Ramsey and the town. Sella Fields Sea-bank, Cumberland, between Marsh Grainge and the Isle of Walney, near Abermeny Ferry, Anglesey. RAY. Isles of Bute, Skye, and Arran, and in Cantire. [Walney Isle. Mr. ATKINSON.] B. May—July.*

SINA'PIS. *Cal.* expanding: *bloss.* claws upright: *glands* between the shorter stamens and the pistil, and between the longer stamens and the calyx: *pod* beaked, opening; valves shorter than the partition.

arven'sis. S. Pods with many angles, swoln and bunched out by the seeds: smooth, longer than the 2-edged beak.

Curt. 321–*Fl. dan.* 753–*Fuchs.* 257–*J. B.* ii. 844–*Dod.* 675. 1–*Ger. em.* 233. 2–*Ger.* 199–*Lob. obs.* 99. 1, *and ic.* i. 198. 2–*Park.* 862. 3–*H. ox.* iii. 3. 7–*Pet.* 45. 12.

Pod sometimes a little hairy. *Cal.* leaves slightly compressed. RELHAN. Differs from Raphanus *Raphinistrum* as follows. *Stem* one third taller, finely scored, commonly of a deep red, often simple. *Flowers* smaller. *Cal.* spreading. *Petals* always yellow, and without veins. *Stem* green, rough with a very few stiff hairs. *Leaves* without any cast of sea green. *Pods* swoln, not angular. *Cal.* yellow, half as long as the petals. Mr. WOODW. *Leaves* harsh; deeply indented and serrated. *Seeds* brown.

* The different species afford nourishment to the *Papilio Brassicæ, Rapæ*, and *Napi*; *Phalæna fuliginosa*; *Aphis Brassicæ*; and *Chrysomela Hyoscyami.*

Chadlock. Wild Mustard, or *Charlock. Corn Cale.* Cornfields, and borders of cornfields. A. May.*

Mr. PITT, in his Staffordshire Reports, observes that the name Charlock, or as it is more commonly pronounced in the midland counties, Kedlock, is not confined to one plant only, but is indiscriminately applied to Sinapis nigra, Brassica Napus, Sinapis arvensis, and Raphanus Raphanistrum, as one or other of these abound more or less in different places.

S. Pods rough with hair : beak very long, slanting, sword-shaped. al'ba.

Curt. 322–*Blackw.* 29–*Ger. em.* 244. 4–*Pet.* 45. 10–*Fuchs.* 538–*J. B.* ii. 856–*Trag.* 101. 1–*Lonic.* i. 164. 2–*Matth.* 563–*Dod.* 707. 1–*Lob. obs.* 100. 2, *and ic.* i. 203. 1–*Ger. em.* 244. 2–*H. ox.* iii. 3, *row* I. 2.

Bunches and *fruit-stalks* scored. *Pods* with 3 knots, somewhat keeled ; hairs expanding ; *beak* keeled, even as far as the last joint. LINN.—*Leaves* rough, all deeply indented or lobed, and frequently with a pair of small wings on the leaf-stalk. *Pods* bunched with the seeds ; *beak* scored, dark green, with a few hairs. Mr. WOODW.—*Stem* strong, hard, nearly cylindrical, branched, set with strong hairs pointing downwards. *Leaves* rough with strong hairs, deeply divided, segments 3 or 5, the terminating one very broad, large, toothed, and indented. *Fruit-stalks* set with strong hairs pointing downwards. *Cal.* leaves upright, opening a little at the top, yellow or purplish, smooth or hispid. *Petals*, limb inversely egg-shaped, yellow. *Seeds* white or reddish.

White Mustard. Cornfields and road sides. A. Aug.†

S. Pods smooth, laid flat to the spike-stalk. ni'gra.

Woodv. 151–*Blackw.* 446–*J. B.* ii. 855.

Stem very much branched ; *branches* distant, expanding. *Root-leaves* rough ; *stem-leaves* smooth. *Pods* short, parallel. RELHAN. *Stem* cylindrical, scored, upper part smooth. *Leaves*, the upper frequently simple, spear-shaped, sharply toothed. *Pods* slightly hairy ; *beak* smooth. *Fruit-stalks* short. Mr. WOODW. *Cups* yellow. *Bloss.* pale yellow.

* The Scandinavians boil and eat it as cabbage, and in Ireland the tender tops are collected for the same purpose.—Cows, goats, and swine eat it. Sheep are very fond of it. Horses generally refuse it.

† It is sown in the winter, and early in the spring, to supply our tables with sallading. The seeds have nearly the same properties as those of the next species.

Common Mustard. Cornfields, ditch banks, road sides, [and banks of the Severn. ST.] A. June.*

RAPH'ANUS. *Cal.* close, upright: *nect. glands* 2 between the shorter stamens and the pistil, and 2 between the longer stamens and the calyx: *pod* round, but protuberating, with cells, and nearly jointed.

Raphanis'-trum. R. Pods round, jointed, smooth, of 1 cell, LINN. *originally of 2 cells, but, as the seeds increase in size, the partition becomes obliterated.* HALL.

Curt. 267–*E. bot.* 856–*Linn. amæn. acad.* vi. *at p.* 451–*Fl. dan.* 678–*J. B.* ii. 851. 1–*Ger.* 179. 2–*Lob. ic.* i. 199. 1–*Ger.* 240. 1–*Pet.* 46. 10–*Ger.* 199–*Park.* 863. 4–*H. ox.* iii. 13. 1 *and* 2–*Park.* 863. 5–*H. ox.* iii. 13, *row* 2, 4. *f.* 4.

Stem rough with transparent hairs pointing backwards. *Leaves* sometimes rough with hairs; the *lower* lyre-shaped, wings alternate, heart-oblong, serrated, the lowermost very small, the odd one very large, rounded at the end, scolloped; the *upper* oblong-spear-shaped, scollop-serrated. *Leaf-stalks* generally rough with hairs. *Calyx* rough with white hairs, very smooth at the base. *Bloss.* generally yellow, but sometimes white or violet, with blackish veins. *Pod,* joints falling off separately. LINN. Differs from the *Sinapis arvensis* as follows: *Stems* even, and usually sea-green, generally branched from the bottom. *Calyx* upright, close. *Bloss.* white, and pale red, as well as yellow, and all in general striped with purplish veins. CURT.—*Plant* generally of a sea-green cast. *Petals* of whatever colour, veined with dark

* The seeds, reduced to powder, make the common mustard so much in request at our tables. They yield a considerable quantity of expressed oil, which partakes but little of the acrimony of the plant. The seeds, when unbruised, impart but little taste to boiling water. Taken inwardly, in the quantity of a meat spoonful or more, they gently loosen the bowels, and are of service in asthma, chronic rheumatism, and palsy. The powdered seeds curdle milk, and give a strong impregnation to boiling water. This infusion, taken in considerable quantity, vomits; in smaller doses, it is an useful aperient and diuretic. Cataplasms, formed with crumb of bread, vinegar, and powdered mustard seed, are very commonly applied to the soles of the feet, as stimulants, in fevers that require such treatment; they are used with advantage, topically applied, in fixed rheumatic and sciatic pains. Upon the whole, wherever we want a strong stimulus, that acts upon the nervous system, without exciting much heat, we know none preferable to mustard seed. Its acrimony consists in an essential oil.—The *Phalæna fuliginosa* lives upon the different species.

lines. Mr. WOODWARD. *Bloss.* yellow and straw-coloured, and white.

White-flowered Charlock. Wild Radish. Amongst corn. A. June, July.*

CLASS XVI.

MONADELPHIA.

TRIANDRIA.

JUNIP'ERUS. M. and fem. flowers on different plants.
M. *Cal.* a catkin: *Bloss.* none.
F. *Cal.* with 3 divisions: *Bloss.* 3 petals: *Styles* 3: *Berry* beneath; 3-seeded; the cup at the base.

DECANDRIA.

GERA'NIUM. *Pistil* 1: *Common Receptacle* beaked: *Caps.* 5 dry berries; with a long beak; twisting.
[Spartium. Genista. Anthyllis. Ulex. Ononis. Oxalis.]

POLYANDRIA.

(1) *Pistil* 1.

TAX'US. Male and fem. flowers on different plants: *Cal.* 4-leaved: *Bloss.* none.
M. *Anthers* 8-cleft.
F. *Summit* 1: *Berry* 1-seeded: *Seed* naked at the end.

(2) *Pistils* 2.

PI'NUS. *Bloss.* M. and fem. flowers on the same plant: *Bloss.* none.
M. *Cal.* 4-leaved.
F. a cone-like *Catkin: Nuts* 2; with a membranaceous wing.

* In wet seasons it grows in great quantity amongst the barley, in Sweden, and the common people who eat barley bread, are afflicted with very violent convulsive complaints in those provinces, and in those seasons wherein this plant abounds. *Amæn. acad.* vi. 430.—Horses eat it. Cows refuse it.

(3) *Pistils many.*

LAVATE'RA. *Outer Cup* 3-cleft: *Seed-coats* in whirls; 1 seed in each.

MAL'VA. *Outer Cup* 3 leaves: *Seed-coats* several; in whirls; 1 seed in each.

ALTHÆ'A. *Outer Cup* 9-cleft: *Seed-coats* several; in whirls; 1 seed in each.

TRIANDRIA.

JUNIP'ERUS. Male and female flowers distinct.
Male. *Cal.* a scale of the catkin: *Bloss.* none.
Fem. *Cal.* with 3 divisions: *petals* 3: *pistils* 3: *drupa* juicy, closed, 1-celled, many-seeded; with 3 tubercles formerly the calyx.

commu'nis. J. Leaves 3 together, expanding; sharp-pointed; longer than the berry.

Fl. Ross. i. 54–*Fl. dan.* 1119–*Ludw.* 189–*Mill. ill.*–*Blackw.* 187–*Sheldr.* 70–*Woodv.* 95–*Kniph.* 1–*Gars.* 88–*Tourn.* 361. 2–*Matth.* 121–*Ger.* 1189. 1–*Fuchs.* 88–*J. B.* i. *b.* 293–*Trag.* 1074–*Lonic.* i. 24–*Cam. epit.* 53–*Dod.* 852–*Lob. obs.* 628. 2, *and ic.* ii. 222. 2–*Ger. em.* 1372. 1–*Park.* 1029. 1.

Anthers under the lateral scales often 5. LEERS. *Berry* continuing 2 years; green, at length blackish purple. RELH. *Bark* reddish. *Berries* bluish black.

Juniper Tree. Heaths. [Near Berkhamsted, Hertfordshire, and abundantly on a common between Blenheim and Ditchley, Oxfordshire. Mr. WOODWARD. On heaths, west of Bishop's Aukland. Mr. ROBSON.] S. May.*

* It grows in fertile or in barren soils; on hills or in valleys; in open sandy plains, or in moist and close woods. On the sides of hills its trunk grows long; but on the tops of rocky mountains and on bogs it is little better than a shrub. LINN.—"A great deal of it grows by the side of the road, between the General's Hut and Inverness, and indeed many of the neighbouring hills are almost covered with it: a ship load of the berries used annually to be sent from hence to Holland." *Garnett's Tour.*—It is easily transplanted, and it bears cropping. Grass will not grow beneath it, but the *Avena pratensis* destroys it.—The wood is hard and durable. The bark may be made into ropes. The berries are 2 years in ripening. When bruised they afford a pleasant diuretic liquor, but it is not easy to prevent

Var. 2. *alpine*. Leaves broader and thicker. Berries longer, more oval than spherical. LIGHTF.

J. B. i. *b.* 302. 1–*Clus.* i. 38. 2–*Ger. em.* 1372. 3.

On the summit of Snowdon, and the mountains of Westmoreland. On Kendal Fell. *R. Syn.* [About 200 yards south west of Llyn y Cwn, Caernarvonshire. Mr. GRIFFITH.]

DECANDRIA.

GERA'NIUM. *Cal.* with 5 divisions: *bloss.* 5 petals; *pist.* 1: *summits* 5, common receptacle beaked: *seeds* 5, with a very long twisted tail.

(2) *Blossoms regular; fruit-stalks* 1-*flowered.*

G. sanguin'eum. Leaves circular, with 5 or 7 divisions: segments 3-cleft: fruit-stalks with a joint; stem trailing.

Fl. dan. 1107–*E. bot.* 272–*Kniph.* 7–*Walc.*–*Clus.* ii. 102. 1–*Lob. ic.* i. 660. 1–*Ger. em.* 945. 2–*Pet.* 64. 9–*Fuchs.* 209–*J. B.* iii. 478. 2–*Lonic.* i. 152. 2–*Trag.* 348–*Park. par.* 227. 6.

Stem hairy, from a foot to a cubit high. *Leaves* above rough, hairy underneath and on the edge. *Fruit-stalks* 3 inches long, hairy, with a knot and 3 floral-leaves about the middle. RELHAN. *Calyx* leaves oval, with membranaceous reddish edges, and terminated by a short red awn. *Petals* inversely heart-shaped, very large, equal, pale red, with deep red veins. Mr. WOODWARD. Whole *plant* set with white expanding hairs. *Leaves* opposite. *Petals* hairy at the base.

Bloody Cranesbill. Limestone Rocks, stony places, dry pastures, heaths, and thickets, in mountainous situations. Arthur's Seat, Edinburgh. LIGHTF.—[Rocks near the sea, Cornwall. Mr. WATT.—Near Buxton, Derbysh. and Roosebeck Low Furness, Lancashire. At Heath, near Woodbridge, Suffolk. Mr. WOODWARD. St. Vincent's Rocks, Bristol. On the left side the lower road from Cheltenham, to Gloucester, 2 miles from the former place.] P. July. Sept.

prevent its growing sour. It is esteemed a good antiscorbutic. The Swedes prepare an extract from the berries which some people eat for breakfast, but it is fitter for a medicine than for food. The spirit impregnated with the essential oil of these berries is every where known by the name of Gin, or Juniper water. The berries sometimes appear in an uncommon form, the leaves of the cup grow double the usual size; approaching, but not closing; and the 3 petals fit exactly close, so as to keep the air from the *Tipulæ Juniperi*, which inhabit them.—Gum Sandarach, more commonly called Pounce, is the product of this tree. Horses, sheep, and goats eat it. *Cimex juniperinus*, *Thirps juniperina*, and *Coccinella* 9-*punctata* feed upon it.

Var. 2. Leaves larger, paler, and more deeply divided. Ray. *Pet.* 64. 10.

Banks of the Devil's Ditch. Ray, Relhan, and the left side of Dallingham Gap going from Canvass-hall. Ray.

Lancastri-en'se. G. Leaves circular, with 5 or 7 divisions; segments 3-cleft: fruit-stalks with a joint: stem upright.

Dill. elth. 136. 163–*Pet.* 64. 11.

Flowers white, with reddish veins. Ray. *Leaves* smaller and more finely divided than in G. sanguineum; the flowers much smaller. The figure of Dillenius too large. Mr. Woodward. *Bloss.* sometimes pale flesh colour with red veins. Dr. Stokes. Grows intermixed with the G. sanguineum in the Isle of Walney, but the flower and every part of the plant is a third smaller; it grows upright, whilst the G. sanguineum creeps upon the ground. Mr. Atkinson. G. *sanguineum* β Linn. γ Huds. G. hæmatodes lancastriense, flore eleganter striato. Dill. Ray; who remarks that it does not change when cultivated, that it is a smaller and more humble plant than the G. sanguineum, and that for these and other reasons he believes it a distinct species.

Isle of Walney, Lancashire, upon the bank, in a sandy soil. P. July, Aug.

(2) *Petals notched, or cloven; fruit-stalks 2-flowered.* Perennial.

pyrena'icum. G. Petals 2-lobed: leaves circular, lower ones with 5, upper with 3 lobes; lobes blunt, 3-cleft.

Curt. 159–*E. bot.* 405–*Ger. prov.* 16. 2.

Stem hairy. *Leaves* hairy, the lower with mostly 7 lobes; lobes with 3 clefts, segments rounded or blunt, the middle one frequently scolloped, the upper with mostly 3 lobes; lobes with 3 clefts, more expanding than in the lower leaves. *Fruit-stalks* longer than the leaves. *Floral-leaves* pointed, 4 to each fruit-stalk. *Calyx* leaves broad and short. *Petals* as long again as the calyx, deeply cloven; lobes roundish, entire. Woodw. *Stem* forked twice or thrice. *Fruit-stalks* solitary, axillary. St. Hairs on the seed-coats few, upright. *Petals* nearly divided down to the base and much larger than in the G. pusillum, the seed-coats of which are rather silky than hairy, the hairs lying close. M. Afzelius.

Mountain Cranesbill. Meadows and pastures. On the banks of the river between Bingley and Keighley, Yorsk. near Enfield, and about Brompton, Chelsea, and in the dry part of the pasturage in Battersea Fields. [Near Oxford. Mr. Woodward.]

Var 2. Blossoms white. P. June, July.

In Chelsea garden, growing as a weed. CURT.

G. Stem 4-cornered, upright: leaves 5 or 3-lobed, toothed, rough above, glossy underneath: petals scored, notched. **nodo'sum.**

Clus. ii. 101. 1–*Ger. em.* 947. 2–*Park.* 703. 2–*J. B.* iii. 478. 1–*Pet.* 65. 4–*H. ox.* v. 16. 22–*Clus.* ii. 101. 2.

Stems spreading, more compressed than in G. *striatum*. *Petals* flesh-coloured, with 3 purple scores, running half way to the point. LINN. *Flowers* before blossoming hanging down, afterwards upright. *Stems* smooth, shining, swoln at the joints. *Leaves*, the lower with 5 lobes, the upper with 3 lobes, opposite; lobes spear-shaped, straddling, entire at the base, irregularly serrated upwards, with 3 strong nearly parallel ribs, and with a few short stiff hairs arising from glands. *Stipulæ* and *flower-scales* alike, small, pointed. *Fruit-stalks* short. *Cal.* leaves awned, smooth. *Petals* red, scolloped; scollops blunt, regular, Mr. WOODWARD.

Knotty Cranesbill. Mountainous situations in Cumberland. RAY. [Mr. WOODW.] P. July, Aug.

G. Stem upright; leaves 5-lobed, cut-serrated: petals entire, or only slightly notched. **sylvat'icum.**

E. bot. 121–*Rose* 1, *at p.* 472, *G. palustre–Fl. dan.* 124–*Cam. epit.* 602–*Park.* 705. 5–*H. ox.* v. 16. 25.

Panicle forked, nearly level. *Pedicles* much longer than the Involucrum. *Calyx* awned. As soon as the flowering is over it becomes upright, with the points bent back. *Bloss.* bell-shaped, expanding, violet-coloured, sometimes white, or variegated with white. LINN. *Flowers* before blossoming hanging down, afterwards upright. *Leaves* slightly hairy, the lower with 7 lobes, the middle with 5, the upper with 3. *Fruit-stalks* with sometimes more than 2 flowers. *Floral-leaves* awl-shaped, small. *Calyx* and *fruit-stalks* very hairy. *Petals* large. Mr. WOODWARD. *Hairs* on the flowering stems, edges of the leaves, and on the calyx, ending in small globules. *Leaves*, segments terminating in small fleshy glands; the upper sitting. *Calyxes* ribbed, membranaceous at the edge, ending in spit-points. *Petals* purple, slightly notched at the end, a little woolly at the base.

Geranium batrachoides alterum. GER. em. 942. (ST.) *Wood Cranesbill.* Mountainous thickets and pastures in Westmoreland, Cumberland, and Yorkshire, and sides of rivers in rocky and shady places. [Holt Wood in Leziate, near Lynn. Norfolk. Mr. CROWE. About Aysgarth Force, Wenslydale. Mr. WOOD. Near Conniston, Lancash. and elsewhere in the North. WOODW.

Corby Castle, Cumberland. Sr. Very common in moist shady places in most parts of the county of Durham, and the petals are as frequently found entire as slightly notched, nor are the leaves target-shaped as described by Linnæus. Mr. Robson. Near Hales Owen, Shropshire.] P. June, July.

Var. 2. Dwarf, with very large flowers. Lightfoot.

Scotland.

(3) *Petals notched or cloven; fruit-stalks 2-flowered.* Annual.

dissec'tum. G. Fruit-stalks shorter than the leaves: leaves 5-lobed, lobes 3-cleft or many-cleft; petals notched, seed-coats with soft hairs.

Curt.–E. bot. 753–*Fl. dan.* 936—*Vaill.* 15. 2–*Plot. oxf.* 9. 4. *at p.* 146–*Pet.* 64. 6, *and* 7–*Fuchs.* 207–*J. B.* iii. 474. 1–*Blackw.* 58. 2.

Leaves divided down to the leaf-stalk into 5, and these again into 3, segments strap-shaped, usually entire, but the middle one sometimes sub-divided. *Fruit-stalks* very short. *Flower-scales* minute. Mr. Woodward. *Calyx* leaves 3-ribbed. *Seed-coats* beset with glandular hairs Mr. Hollefear. *Stem* hairs pointing downwards. *Calyx* hairs viscid. Curt. *Calyx* awned. Flowers red. Anthers blue.

Jagged Cranesbill. Road sides; borders of fields, ditch banks. Hedges about Marston and Botley Causeway, next Oxford. Plot. Woods near Marston, Oxfordshire. Ray.

A. May—Aug.

columbi'-num. G. Fruit-stalks longer than the leaves: leaves 5-lobed, lobes many-cleft: calyx 5-sided: seed coats smooth. *Aiton Hort. Kew.*

E. bot. 259–*Vaill.* 15. 4–*Pet.* 64. 8.

Leaves hairy underneath; segments strap-shaped. *Petals* nicked, with a sharp point between the lobes. Linn. *Leaves* divided quite to the leaf-stalk; segments several, sub-divided. *Pedicles* very long, straddling a good deal. *Calyx* very large, bellying. Woodw. *Stem* hairy; *hairs* laid flat. Mr. Robson. *Leaves* a little hairy on both surfaces. *Calyx* somewhat hairy, skinny at the edges, terminated by short awns reddish at the ends. *Petals* marked with 3 lines; the little tooth between the lobes not very pointed, reddish blue. *Stamens* with 10 green glands at the base.

Long-stalked Cranesbill. Cornfields, pastures, and hedges. [Heydon, Norfolk. Mr. Bryant. St. Vincent's Rocks. In a barren gravelly soil near the entrance upon Barr-beacon from Birmingham.] A. June—Aug.

G. Leaves kidney-shaped, 7 or 5-lobed; lobes wedge-shaped, 3-cleft, bluntish: calyx awnless: seed-coat hairy. malvæfo'-lium.

(Cavanill. diss. t. 82. f. 1.) on Gmelin's authority.

This plant seems to have been confounded sometimes with the molle, and sometimes with the rotundifolium. It differs from the former in its seed-coat being hairy and not wrinkled; from the latter in its awnless calyx and its notched petals. I have no doubt but it is the G. *pusillum* of Linnæus, represented in Ray 16. 2. *(a)* and *(b)*; though that being a dwarf or starved specimen has occasioned an improper trivial name to be applied to the species, and which, if continued, would infallibly occasion a repetition of the same doubts and difficulties which have hitherto attended the subject.

I am indebted to Mr. Robson for a full grown specimen of this plant, as well as for the following description of it.

The root throws out many cylindrical much branched stems, varying in length according to the situation and soil; procumbent when growing alone, but upright when growing among other plants, and frequently attaining the height of 2 feet. *Stem* and *branches* just sensibly downy, and soft to the touch. *Leaves* kidney-shaped, deeply lobed, hairy, especially on the margin, and veins on the under surface: hairs expanding. Root and lower stem *leaves* generally 7-lobed; upper *leaves* 5-lobed, more deeply divided, opposite, unequal; lobes wedge-shaped, 3-cleft, bluntish. *Floral-leaves* 4, awl-shaped, hairy. *Fruit-stalks* alternate, axillary, upright. *Calyx* hairy, awnless. *Petals* inversely heart-shaped, bluish purple, notched; claws upright, about the length of the calyx. *Stamens* distinct at the base, 5 with and 5 without anthers. *Seed-coats* even, covered with short bristles pointing upwards. *Seeds* smooth. Obs. Varies with leaves alternate towards the tops of the stem and branches, and with 3 or sometimes 4 flowers on a fruit-stalk. Mr. Robson. —G. *malvæfolium*, Scop. but excluding his reference to Vaillant.

[Hedges, and waste places as common about Darlington as the G. *molle*. Mr. Robson.] A. June, July.

Var. 1. *pusillum*. Linn. Stem spreading; leaves kidney-shaped, fingered; lobes strap-shaped, acute.

E. bot. 385–*Vaill.* 15. 1–*Ray Syn.* 16. 2. *a. b.*

About 2 or 3 inches high. *Leaves* small. *Bloss.* bluish, very small. *Petals* cloven, equal. Found in situations by no means barren, whence it cannot be thought merely a variety of the G. *rotundifolium*. Dill. *in R. Syn.* Resembling the G. *rotundifolium* but smaller. Lobes of the leaves acute, not blunt. *Petals* cloven, blue. *Calyx* awnless. Linn. *Stem* and *branches* covered with a very short down, extremely soft and velvet-like

when drawn through the fingers. *Leaves* opposite. *Fruit-stalks* alternate, axillary. WOODWARD.

High ditch banks. At Low Layton, early in spring. DILL. A.

mol'le. G. Fruit-stalks and floral-leaves alternate: petals cloven: calyx awnless: stem somewhat upright.

Curt. 141–*E. bot.* 778–*Fl. dan.* 679–*Vaill.* 15. 3–*Pet.* 64. 2.

Pedicles declining. *Flower-scales* cloven. *Calyx* scarcely awned, shorter than the blossom. *Petals* slightly cloven, without a tooth between the lobes. LINN. *Stem* hairy, hairs expanding. Mr. ROBSON. Trailing when growing alone, upright when amongst grass or other plants. *Bloss.* sometimes almost as large as those of G. *pyrenaicum.* CURT. *Root-leaves* kidney-shaped, with a circular outline, with 7 lobes, lobes with 3 clefts; the upper more distinctly kidney-shaped, and more finely divided. In the above it agrees with G. *rotundifolium*, but differs in the *stem* and *branches* being cloathed with long soft hairs expanding horizontally. WOODW. *Flowers* purplish red; sometimes white. RAY. *Seeds* marked with transverse wrinkles, but in the *rotundifolium* they are dotted. In the G. *rotundifolium* the petals are entire, but cloven in the G. *molle*. M. AFZELIUS. *Stem-leaves* 5-lobed; lobes wedge-shaped, blunt. *Fruit-stalks* opposite the leaves. *Glands* 5, on the outside of the anther-bearing filaments, green.

Soft Cranesbill. Dovesfoot. Dry banks, cornfields, meadows, and pastures, in a sandy soil. A. April—Oct.

(4) *Petals entire; fruit-stalks 2-flowered.* PERENNIAL.

phæ'um. G. Fruit-stalks solitary, 2-flowered, opposite the leaves: calyx somewhat awned: stem upright: petals waved.

E. bot. 322–*Fl. dan.* 987–*Kniph.* 5–*Walc.*–*Clus.* ii. 99. 1–*Ger. em.* 942. 3–*Park.* 704. 3.

Stems nearly cylindrical, woolly below, from 18 inches to 2 feet high; joints large, tinged with red. *Leaves*, the lower with 6 or 7 lobes, the middle ones with 4 or 5, the uppermost 3 or 4; lobes serrated. *Fruit-stalks* forked, with 2 flowers. *Calyx* thick set with short hairs, terminated by little globules, interspersed with a few long, soft, woolly, hairs; *leaves* with 3 longitudinal lines, and terminated by little blunt callous substances. *Petals* egg-shaped but angular, blackish purple, shining; *claws* white, marked with 5 lines, and woolly. *Filaments* purple, broad and woolly at the base, slightly united by means of 5 green glandular substances placed on the outside of them; after flowering turned outwards. *Anthers* whitish, the seams marked with a purple line.

Pollen greenish yellow. *Germen* woolly. *Style* green, shorter than the stamens till the time of flowering. *Seed-coats* hairy.

Dusky Granesbill. Mountainous pastures. [In a dingle at Downing, Flintsh. Mr. DICKENSON. In woods about Darlington. Mr. ROBSON. Near Cradley, Worcestersh.]

P. May, June.

G. Leaf-stalks nearly central; leaves with many divisions, wrinkled: lobes with winged clefts, acute: petals entire. praten'se.

Curt. 250–*E. bot.* 404.–*Kniph.* 5–*Matth.* 857–*Clus.* ii. 100. 1–*Dod.* 63. 2–*Lob. obs.* 376. 3, *and ic.* i. 659. 2–*Ger. em.* 943. 1–*Pet.* 65. 7–*Walc.*–*Ger.* 797. 2–*Fuchs.* 208–*J. B.* iii. 475–*H. ox.* v. 16. 14.

Pedicle while it is in blossom not longer than the involucrum. *Calyx* awned, after flowering closed, nodding. *Bloss.* flat *Petals* blue, rounded at the end, not nicked. *Style* longer than the stamens. Begins to flower when the G. *sylvaticum* is going out. LINN. *Stem* 2 to 3 feet high. *Leaves* with 7 to 5 divisions; segments lobed, deeply toothed, hairy, with strong ribs underneath; those of the upper leaves almost strap-shaped. *Leaf-stalks* long. *Floral-leaves* 4, spear-shaped, pointed. *Fruit-stalks* very short, downy. *Petals* very large, blue, or white. WOODWARD. *Stems* forked, tinged more or less with red; hairs on the upper branches white, and terminated by minute dark red globules. *Leaf-stalks* nearly central. *Leaves* with 5 to 7 divisions; segments with winged clefts, which are more or less jagged and toothed. *Calyx* ribbed, membranaceous at the edges, terminated by spit-points, thick set with fine white hairs tipt by scarlet globules. *Petals* inversely egg-shaped, with 7 to 9 whitish lines, and a little hairy at the base. *Filaments* very broad, and somewhat concave at the base. *Anthers* purple. *Pollen* yellow.

Crowfoot Granesbill. Moistish meadows and pastures.

P. June, July.

G. Stem trailing: leaves heart-egg-shaped, scolloped, cut, rough: fruit-stalks 1 to 3-flowered: stamens 5. marit'imum.

Dicks. h. s.–*E. bot.* 646.–*Pluk.* 31. 4–*Pet.* 65. 1–*H. ox.* v. 35. *row* 3. *f.* 2.

Umbel often leafy. *Petals* entire, often wanting. *Fruit-stalks* with often 2 flowers. LINN. *Stems* branched, lying close to the ground. *Root-leaves* on long fruit-stalks, spreading in a circle on the ground, hairy, variously cut and jagged, sometimes nearly lobed; *stem-leaves* similar. *Fruit-stalks* shorter than the leaves. *Flowers* 1 to 3, small. *Beaks* very small, not exceed-

ing half an inch in length. WOODWARD. *Leaf-stalks* much longer than the leaves. *Fruit-stalks* compressed. *Filaments* spear-shaped. *Anthers* purple. *Summits* greenish yellow. *Bloss.* pale red.

Erodium maritimum. E. bot. *Sea Cranesbill.* Sandy sea shores, common. [Acle, Norfolk. Mr. CROWE. Rocks at Portawen, Cornwall. Mr. WATT. Sandy commons between Enville and Bewdley, Worcestershire, always in a South aspect. Mr. HUNTER. Leigh Down, near Bristol. Mr. SWAYNE. Sea coast Teignmouth, with flowers from 2 to 4 on each fruit-stalk.]
P. June—Oct.

(5) *Petals entire: fruit-stalks 2-flowered.* ANNUAL.

lu'cidum. G. Calyx pyramidal, the angles raised and wrinkled: leaves roundish, 5-lobed.

Fl. dan. 218–*E. bot.* 75–*Kniph.* 11–*Thal.* 5–*J. B.* iii. 481. *Park.* 707. 9–*Walc.*–*Pet.* 64. 12–*H. ox.* v. 15. 6.

Stems shining, yet slightly hairy. *Leaves* the same, kidney-shaped, with mostly 5 lobes: lobes with 3 lobes, the middle one with usually 3 scollops, the side ones entire; in rocky situations only half an inch broad, and not so much divided. *Pedicles* straddling. *Flower-scales* very minute. Mr. WOODWARD. Seed coat with several rugged longitudinal ribs, hairy at the top. *E. bot.* Whole plant often assuming a dark purplish red colour like the G. robertianum. *Stem* branched. *Calyx* not quite equal. *Petals* rose red.

Shining Cranesbill. Walls, roofs, rocky places, dry banks, and shady places, in a sandy soil, [and frequently among corn on a chalky soil, and in exposed situations, as near Stamford; Bury, Suffolk; common in the North. Mr. WOODWARD. Abundant about the entrance of Peak's Hole, Derbyshire.]
A. June—Aug.

rotundifo'lium. G. Petals entire, as long as the calyx: stem spreading: leaves kidney-shaped, cut: seed-coat even, hairy: seeds reticulated. *E. bot.*

E. bot. 157–*Pet.* 64. 4. *and* 3–*Fuchs.* 205–*J. B.* iii. 473. *Ger.* 793–*Walc.*–*Matth.* 855–*Dod.* 61. 2–*Lob. obs.* 376. 2, *and ic.* i. 658. 1–*Ger. em.* 938–*Park.* 706. 2–*Pet.* 64. 1–*H. ox.* v. 15. 2.

Stem straddling, cylindrical, downy, clammy. *Leaves* rounded, soft, downy, somewhat clammy, especially underneath, lobed, with a red point in the hollows. *Leaf-stalks* reddish brown. *Calyx* awned, wrinkled, open, with 3 longitudinal wrinkles. *Petals* wedge-shaped, very blunt, with 3 reddish

brown scores at the base, the under surface not lying upon, but raised from the calyx. *Anthers* yellow. LINN. *Stipulæ* spear-shaped; floral-leaves always of a deep red. Mr. WOODWARD. *Stem* velvety. Mr. ROBSON. *Seeds* dotted; *Petals* entire. These circumstances at once distinguish it from the *G. molle*. M. AFZELIUS. *Flowers* purplish flesh colour, sometimes white.

Round-leaved Cranesbill. Walls, roofs, ditch banks, and sandy pastures, about Bath, Bristol, Battersea, Wandsworth, Mortlake, and Kew. [Suffolk, common. Mr. WOODWARD. St. Vincent's rocks, Bristol.] A. May—July.

OBS. The G. columbinum, malvæfolium, molle, and rotundifolium, whose distinctions have occasioned much trouble, may be clearly understood by attending to the following circumstances.

G. columbinum. Its awned calyx distinguishes it from the molle and the malvæfolium, and its notched petals from the rotundifolium.

— *malvæfolium.* Its awnless calyx distinguishes it from the columbinum, its hairy seed-coat from the molle, and its notched petals from the rotundifolium.

— *molle.* Its awnless calyx distinguishes it from the columbinum, its hairless and wrinkled seed-coat from the malvæfolium, and its notched petals from the rotundifolium.

— *rotundifolium.* Its entire petals and its dotted seeds distinguish it from the other three.

Should any further distinctions be necessary consult an ingenious paper in Gent. Mag. p. 487, for the year 1797.

G. Leafits by fives or by threes, lobes wing-cleft; calyx with 10 angles. robertia'-num.

Curt.-Walc.-Blackw. 480-*Lonic.* i. 152. 1-*Fl. dan.* 694-*Dod.* 62-*Lob. obs.* 375. 1, *and ic.* i. 657. 2-*Ger. em.* 939, *and* 945. 5-*Park.* 710. 8-*H. ox.* v. 15. 11-*Pet.* 65. 5-*Fuchs.* 206-*Trag.* 108-*J. B.* iii. 480-*Matth.* 858.

Calyx hairy, the 10 angles formed by the 1st and 3d outer leaves being each folded into 3 keel-like angles, the 2d and 5th each into 1, and the 4th into 2. *Petals* entire. *Scent* rank. The whole *plant* sometimes red. LINN. *Leafits* of the lower leaves distinct, those of the upper confluent. *Fruit-stalks* very long. *Pedicles* short. Mr. WOODWARD. Whole *plant* beset with pellucid hairs, but becoming smoother as the plant grows older. *Upper leaves* divided into 3 parts, the lowermost into 5; leafits united at the base, with winged clefts; segments terminated by a little sharp thorn. *Stems* tinged with red at the joints. *Calyx* awned, the angles more evident as the seeds ripen. *Petals*, claws long, border a little ragged, with 3 faint white lines. *Filaments* not very evidently united. *Anthers* red. *Pollen* yellow. *Style* hairy. *Summits* a fine crimson. *Stem* branched, spreading. *Bloss.* red, sometimes white.

Herb Robert. Stockbill. Roberts Cranesbill. Walls, hedges, rubbish, and stony places. A. April, Aug.

Var. 2. White flowered.

[Road from Lichfield to Stafford, a little beyond the 4th mile stone, plentifully. Mr. SAVILLE. Den of Portend, near the Loch of Monteith. Mr. BROWN. Near Exeter. Mr. MARTYN.]

Var. 3. *shining*. Whole plant shining. Leaves smaller and more deeply divided. WOODWARD.

Pet. 65. 5. Mr. WOODWARD.

Near Swanning, Dortsetshire. Shore of Selsey Island.

(6) *Fruit-stalks many-flowered: leaves winged.*

moscha'tum. G. Flowers in umbels: leafits mostly on short leaf-stalks, unequally cut.

Riv. pent. 112. *G. mosch.–Jacq. hort.* i. 55–*Blackw.* 150–*Matth.* 856–*Dod.* 63. 1–*Lob. obs.* 376. 1, *and ic.* i. 658. 2–*Ger. em.* 941–*Park.* 709. 1–*Pet.* 65. 2–*H. ox.* v. 15. 10–*Ger.* 796–*Trag.* 347.

Very like the *G. cicutarium*; of an ambrosial scent. LINN. Whole *plant* more hairy than *G. cicutarium*; *hairs* glutinous, particularly those of the calyx. *Flowers* more numerous, forming a roundish head. *Pedicles* shorter. *Leaves, wings* fewer, egg-shaped, sometimes only serrated, or jagged, rarely with winged clefts. WOODWARD. Whole *plant* hairy. *Stems* swoln and crooked at the joints. *Leafits* opposite and alternate, the terminating one 3-cleft. *Fruit-stalks* with from 4 to 10 flowers, thickly set with fine white hairs, ending in pellucid globules. *Calyx* set with the same kind of hairs as the fruit-stalks; *leaves* unequal, ribbed, ending in spit-points. *Petals* with 3 fibres. *Seed-coat* with strong yellow hairs. *Bloss.* red or purple. *Glands* 5 on the outside of the anther-bearing filaments; green.

Musked Cranesbill. Muscovy. Dry pastures in Westmoreland and Yorkshire. Near Battersea, and between Bristol and St. Vincent's rocks. [Near Stourbridge. ST. Hornsey, Yorkshire, and Farringdon, Somersetshire. Mr. BAKER. At Teignmouth.] A. May—Oct.

cicuta'rium. G. Flowers in umbels: leafits sitting, wing-cleft, blunt: petals entire.

Curt.–Fl. dan. 986–*Kniph.* 11–*Fuchs.* 204–*J. B.* iii. 479–*Dod.* 64. 1–*Lob. ic.* 659. 1–*Ger. em.* 945. 3–*Pet.* 65. 3–*H. ox.* v. 15. 9–*Ger.* 800. 3, *and* 4–*Cam. epit.* 601–*Riv. irr. pent. G. robertianum.*

Petals entire, the 2 upper ones with a spot at the base, as is also the case with the G. *moschatum* and the G. *pimpinellifolium* of Dill. Giss. 173. Linn. *Leafits* more deeply cut in the summer than in the spring. *Bloss.* varying much in size even on the same plant. *Petals* the 2 shorter ones sometimes spotted, sometimes only one of them spotted, and sometimes neither. Stokes. Plant either hairy or smooth. *Leafits* pointed, jagged. Woodward.

The various appearances of this plant at different seasons and in different soils, and its resemblance in many respects to starved specimens of the G. moschatum, have occasioned many errors. The spots on the petals are not to be trusted, neither are the incisions of the leafits. The musk odour of the G. moschatum, is the most obvious distinction. In the G. *cicutarium* the leafits are in general more deeply and more finely cut, and shoulder up close to the mid-rib with hardly the appearance of a leaf-stalk, but in the G. moschatum the leaf-stalks to some of the leafits are sufficiently obvious, and in the larger specimens the edges of the leafits are little more than serrated. *Flowers* rose red.

Hemlock-leaved Cranesbill. Cornfields, road sides, ditch banks, walls, rubbish, in a sandy soil. [Near the shore at Teignmouth.] A. April—Oct.

Var. 2. *fine-leaved* Leafits with winged clefts, segments strap-shaped.

G. *pimpinellifolium.* Ray. Woodward. Bot. arr. ed. ii. *Leaves, wings* with deeper winged clefts than those of the preceding. *Little wings* nearly strap-shaped, rarely jagged. Sandy heaths and cornfields, Suffolk, frequent. Woodward.

Mr. Woodward thought this a distinct species, and so does Mr. Robson, but we are not yet in possession of specific differences sufficient to establish it as such. Ray refers us to Rivinus irr. pentap. icon. G. robertianum for a figure of his G. Pimpinellæfolio, but that figure is a representation of G. cicutarium in its largest and probably cultivated state.

Both in this and in the preceding there are 5 glands of a dark colour on the outside the base of the anther-bearing filaments.

Var. 3. *hoary. Flowers* larger. *Bloss.* white. *Stems* thicker. *Leaves* not so finely cut. Ray. *Leaves* hoary with white hairs, possibly the effect of the sea air. Mr. Woodward.

Near Camberwell. Ray. Sea banks near Weems, Fifeshire. Lightf. [On Yarmouth Denes very plentifully, and elsewhere within the distance of a few miles from the sea. Mr. Woodw. St. Vincent's Rocks, Bristol.]*

* Among the numberless instances of obvious providential design and contrivance, in the structure of the seeds and seed-vessels of plants, few are, perhaps, more remarkable, or more strikingly display themselves as the workmanship of an intelligent artificer, than that which we meet with in the seeds of the *Geranium cicutarium*, *moschatum*, and, perhaps, in some other species of *Geranium*. The seeds of this genus surround the pistil

POLYANDRIA.

ALTHÆ'A. *Calyx* double, outer 9-cleft: *capsules* many, 1 seed in each.

officina'lis. A. Leaves undivided, angular, cottony.

Kniph. 6–*Ludw.* 1–*E. bot.* 147–*Woodv.* 53–*Fl. dan.* 530–*Blackw.* 90–*Park.* 304. 1–*Fuchs.* 15–*Trag.* 371–*J. B.* ii. 954–*Lonic.* i. 157. 1–*Ger.* 787–*Matth.* 925–*Clus.* ii. 24. 1–*Dod.* 655. 1–*Lob. obs.* 373. 1, *and ic.* i. 653. 1–*Ger. em.* 933. 1–*H. ox.* v. 19. 12.

Stem upright, a yard high or more, cottony, cylindrical, somewhat branched. *Leaves* egg-spear-shaped, woolly, very soft, velvety; the upper smaller, with generally 3 imperfect lobes, serrated, with mostly 5 ribs underneath; the lower larger, with 7 ribs, sometimes serrated, sometimes rather scolloped. *Flowers* from the bosom of the leaves, on fruit-stalks, in a kind of panicle. *Flower-scales* many-cleft, bristle-shaped. *Petals* nicked, flesh-coloured. RELHAN. *Stem* and *leaves* clothed with a thick pile, feeling exactly like velvet. All the *leaves* obscurely lobed, doubly serrated; the lower egg-shaped, somewhat heart-

pistil at its base; each seed is covered with a distinct seed-coat peculiar to itself, which, after having inclosed the seed, runs out in the form of a narrow appendage or tail, to the extremity of the style, to which it is slightly connected along its whole length, and which has 5 grooves or flutes to receive the 5 seeds with their appendages. Each of these appendages has the property of contracting itself into a spiral or screw-like form, when dry; and of again extending itself into a right line, when moist. In short, it is a spiral spring, which lengthens or contracts itself alternately, as often, and in such proportion, as it happens to become wet or dry. This power first exerts itself when the seed and its appendage becomes dry, in consequence of arriving at maturity; when it gradually separates the seed from its parent plant. The seed, thus disengaged, is continually contracting and dilating itself, as the weather changes from wet to dry, and from dry to wet; and by this means is kept in motion, till it is either destroyed by the vicissitudes of the seasons, or meets with some crevice in the earth, or some light porous spot, into which it can easily insinuate itself, and from thence, in due time, produce a new plant. The particular minutiæ of the mechanical structure and operations of this curious seed will be better understood by inspection, than by the most accurate and laboured description: and all its manœuvres may be seen in a short space of time, by alternately moistening and drying it: which may be readily done, by putting a little water on one edge of a white stone or china plate, and removing it by turns from the dry to the moist, and from the moist to the dry part of the plate: or the changes may still more quickly be produced, by removing it from the wet to a fresh plate, and drying it before a fire. I mention a white plate, because on that, I imagine, the fine hairs which display themselves from the sides of the tail, as that contracts, and which act as fulcra, or feet, to assist and direct the seed in its motions, are most easily distinguished. Dr. ARNOLD.

shaped at the base; the upper egg-spear-shaped. *Bloss.* white, or pale flesh-coloured. WOODWARD. *Leaves* on leaf-stalks, angular. *Calyx*, the outer with sometimes 11 or 12 segments. *Petals* fringed at the base.

Marsh Mallow. Wymote. Salt marshes and banks of rivers. [Salt marshes, Norfolk and Suffolk. Mr. WOODW.—Sea shore near Marazion and Penzance, Cornwall. Mr. WATT.] P. Aug.*

MAL'VA. *Calyx* double, the outer mostly of 3 leaves: *capsules* 8 or more, in a whirl; 1, rarely 2-celled: 1 seed in each.

M. Stem declining: leaves roundish-heart-shaped, slightly 5-lobed: flowers on fruit-stalks, generally in pairs: petals the length of the calyx. (E. bot.) pusil'la.

E. bot. 241.

M. *parviflora.* Huds. Said to have been found by him, as heretofore, by Mr. Sherard and Mr. Rand at Hithe in Kent. Dr. Smith observes that it is chiefly distinguishable from the M. rotundifolia in the petals scarcely exceeding the calyx, and the fruit-stalks being only 2 in the bosom of each leaf-stalk; though he is not quite satisfied that they are permanently distinct. [My specimens gathered in Pembrokesh.] B. July.

M. Stem prostrate: leaves heart-shaped, circular, plaited, 5 or 7-lobed: fruit-stalks when ripe declining. rotundifo'lia.

Curt. 157–*Fl. dan.* 721–*Fuchs.* 508–*J. B.* ii. 549. 2–*Trag.* 369–*Dod.* 653. 2–*Lob. obs.* 371. 2, *and ic.* i. 651. 1–*Ger. em.* 930. 2–*Lonic.* i. 156. 2.

Bloss. white, with a tinge of purple, but sometimes, as in the neighbourhood of Upsal, quite white and smaller. LINN. *Stem* and *branches* lying close to the ground. *Leaves* serrated. *Leaf-stalks* very long. *Leaf-scales* in pairs, spear-shaped, fringed. *Fruit-stalks* much shorter than the leaves, with 1 flower. *Bloss.* white, with purple veins. Mr. WOODWARD. *Leaf-stalks* twice or more times longer than the leaves. ST. When the larger leaves are laid quite flat, hardly any interval remains between the 2 edges at the base, so that they then appear quite circular. *Flowers* several together, on fruit-stalks of very different lengths. *Calyx*, outer scales spear-shaped, nearly as long as the inner cup.

* The whole plant, particularly the root, abounds with a mild, mucilage. The root boiled is much used as an emollient cataplasm, and an infusion of it is very generally prescribed in all cases wherein mild mucilaginous substances are useful.

Bloss. purplish rose red, sometimes paler, full twice as long as the calyx.

Mauls. Dwarf Mallow. Road sides, among rubbish. [On Saint Vincent's rocks. Mr. SWAYNE.] A. June—Oct.

sylves'tris. M. Stem rough; leaves 5 or 7-lobed, toothed: outer calyx leafits partly united at the base.

Curt.–*E. bot.* 671–*Blackw.* 22–*Woodv.* 54–*Fuchs.* 509–*J. B.* 949. 1–*Ger.* 785. 1–*H. ox.* v. 17. 8–*Dod.* 653. 1–*Lob. obs.* 371. 1, *and ic.* i. 650. 2–*Ger. em.* 930. 1.

Stem more or less upright, rough, hairy, nearly of the same thickness throughout, rather woody. *Leaves* with 5 lobes, rarely 6 or 7, unequally serrated, hairy on both sides, with a dark purple stain near the insertion of the leaf-stalk. *Leaf-stalks* 3-cornered, rough. *Fruit-stalks* nearly cylindrical, from the bosom of the leaf-stalks or branches. *Cal. outer,* leaves spear-shaped; both *inner* and *outer* hairy without, smooth within, toothed at the edges, and the teeth terminating in long hairs. *Petals* deeply nicked, but not bitten, purple, with 3 or 4 darker streaks. *Summits* 11 or 12. The colour of the flowers varies with more or less of a bluish cast, and the leaves are liable to be variegated with yellow white blotches.

Common Mallow. Mauls. Hedges, foot paths, and amongst rubbish. [Though so common in most parts of England, it is so scarce about Kendal in Westmoreland, that to find a plant of it is regarded as a botanical discovery. Dr. STOKES. Its trivial name ill accords with its usual places of growth in this country, for though so common in the midland parts of England, I don't recollect ever having found it in a wood.] A. June—Aug.

moscha'ta. M. Stem upright: root-leaves kidney-shaped, cut: stem-leaves with 5 divisions; segments between winged and many-cloven: leafits of the outer cup distinct.

Curt. 228–*E. bot.* 754–*Fl. dan.* 905–*Col. ecphr.* 147–*Walt.* –*J. B.* ii. 1067. 1–*H. ox.* v. 18. 4.

Differs from M. *Alcea* as follows: *Stem* not so tall, with solitary upright hairs rising from a prominent little point. *Seed-coats* rough with hairs. *Flowers* of an ambrosial scent. LINN. In the M. *Alcea* the calyx has a protuberating ring at the base, and the outer cup is formed of 3 egg-shaped leafits, but the M. moschata has no such ring at the base of the calyx, and the leafits are spear-shaped. CURT. The M. moschata may also be distinguished by its musk-like smell, but this is not always perceptible, and there is reason to believe that in this case it has been mistaken for the M. Alcea, a plant which I believe is not one of our natives. *Flowers* flesh-coloured. *Styles* 14 to 18.

Musk Mallow. Meadows, pastures, road sides, and ditch banks. [Hertfordshire, Huntingdonshire, Derbyshire, and the North, frequent. In Norfolk and Suffolk sparingly. Mr. Woodw. Very common in the midland counties.] P. July, Aug.

LAVATE'RA. *Cal.* double, the *outer* 3-cleft: *capsules* many, equal in number to the summits; placed in a circle, 1 seed in each.

L. arbo'rea. Stem woody: leaves with 7 angles, cottony, plaited: fruit-stalks crowded, axillary, 1 flower on each.

Gærtn. 136. 2, *Calyx and fruit—Besl. Eyst. æstiv.* vi. 6. 1, *on the authority of Gærtner, and Cavanill. diss.* v. 139. 2, *on that of Gmelin.*

Stem in the smaller plants like that of a cabbage, but taller; in the larger plants from 4 to 6 feet high, and as much as 4 inches in diameter. *Leaves* with 7, 5, or 3 angles; as soft as the finest velvet. *Flowers* mostly in pairs. *Calyx, outer* much larger than the inner; the segments broad, blunt, sometimes notched. *Bloss.* purplish red, with dark blotches at the base of the petals. The cylinder of united filaments woolly at the base.

Tree Mallow, or *Velvet-leaf.* Sea shores. Hurst Castle, over against the Isle of Wight. Portland Island, rocks of Caldey Island, and Basse Islands, near Edinburgh. Ray.—Inch Garvey and Mykrie-Inch, in the Firth of Forth. Sibbald. Cornwall and Devonsh. Huds. [Chissel in Portland Island. Mr. Waring. At Teignmouth.] B. July—Oct.

TAX'US. Male and female flowers on different plants: *bloss.* none: *calyx* a 4 or a 7-leaved bud.
Male. *Anthers* target-shaped; 8-cleft.
Fem. *Style* none: *seed* 1, surrounded at the base by a pulpy receptacle; the upper half naked.

T. bacca'ta. Leaves solitary, strap-shaped, prickle-pointed, near together: receptacle of the male flowers somewhat globular.

E. bot. 746—*Hunt. Evel. p.* 378; i. *p.* 275. *ed.* II.—*Blackw.* 572—*Kniph.* 1—*Cam. epit.* 840—*Tourn.* 362. 1—*J. B.* i. *b.* 241. 2—*Dod.* 859. 1—*Lob. obs.* 637. 1, *and ic.* ii. 232—*Ger. em.* 1370—*Ger.* 1187. 2—*Park.* 1412—*Gars.* 580—*Matth.* 1099.

Berries very singular, proceeding from a receptacle which half covers and protects the seed, coming to perfection in the 2d year. *Seed* with 2 seed-lobes. LINN. *Bark* reddish. *Berries* when ripe red.

Common Yew Tree. Mountainous woods and hedges. *R. Syn.* Mountains of Westmoreland, Cumberland, and hills of Herefordshire. HUDS.—In a truly wild state out of the clefts of the rocks on Giggleswick Scar, where several grow out of the fissures, and spreading on each side, clothe the rock to some distance. [In inaccessible situations, on the rocks of Borrowdale, and on Conzick Scar, near Kendal. There can be little doubt but these are its truly natural situations. WOODWARD.—On the mountain called Yew-barrow, clearly in its indigenous state, and in several other inaccessible places on the mountains of Furness Fells. Mr. ATKINSON.—On castle Eden dean, undoubtedly wild. Mr. ROBSON.] T. March, April.*

PINUS. Male and Fem. flowers on the same plant:

bloss. none.

Male. *Calyx* scales forming a bud standing open: *anthers* naked.

Fem. *Calyx* scales forming a cone, 2 flowers in each scale: *pistil* 1: *nut* of 1 cell, without valves, bordered with a membrane.

sylves'tris. P. Leaves in pairs, rigid: cones egg-conical, mostly in pairs, as long as the leaves: scales oblong, blunt.

* It grows best in a moist loamy soil. On bogs or dry mountains it languishes. It bears transplanting even when old. It is often planted to make hedges, and as these hedges admit of clipping, they form excellent skreens to keep off the cold winds from tender plants.—The wood is hard, smooth, and beautifully veined with red. It is converted into bows, axle-trees, spoons, cups, cogs for mill-wheels and flood-gates for fish-ponds, which hardly ever decay.—The berries are sweet, and viscid. Children often eat them in large quantities without any inconvenience.—Swine and Fieldfares are fond of them. The fresh leaves are fatal to the human species. Three children were killed by a spoonful of the green leaves. They died without agony, or any of the usual symptoms of vegetable poisons. The same quantity of the dried leaves had been given the day before without any effect. *Percival's essays*, iii. - Sheep and goats eat it, horses and cows refused it. LINN.—but there are instances of both having been killed by eating it, branches having been found in their stomachs. *Gent. Mag.* lvi. 941, and sheep are said to have been killed by browsing upon the bark. I suspect that the loppings in a half dried state, are most detrimental to cattle.—Several mountainous places are named in the Gent. Mag. 1793. p. 101, in which it doubtless grows wild. Those trees situated in the accessible parts of the mountains are generally cut down and brought to market for chairs and steps of ladders, for which use their durability renders them valuable.

Fl. Ross. II. *f.* I. i.–*Mill. ill.*–*Blackw.* 190–*Hunt. Evel.* 266; i. *p.* 274. *ed.* II.–*Woodv.* 207–*Barr.* 729–*Tourn.* 355, 356, *P. Q.*–*Matth.* 98–*Ger.* 1175. 2–*J. B.* i. *b.* 253–*Dod.* 860. 1–*Lob. obs.* 631. 2, *and ic.* ii. 226. 2–*Ger. em.* 1356. 1.

Cones whitish, pendent.

Scotch Fir. Highland mountains, both scattered, and in natural forests of many miles extent. LIGHTFOOT. T. May.*

* It flourishes best in a poor sandy soil. In a grove, the trunk becomes tall and naked; in sunny open places, branched. On rocks or bogs, it seldom attains a large size. In black soil it becomes diseased, and in chalky land it dies. Sometimes it will thrive near running, but never near stagnant waters. None but the terminating buds send forth branches, therefore it will not bear the least clipping. The roots spread very near to the surface of the earth, all but the central root, which grows perpendicularly downwards; and if this is broken off, or interrupted in its passage by rocks, the stem ceases to shoot upwards, and the tree for ever remains a dwarf. Upon this account it is apt to suffer by transplanting.—This tree furnishes us with the best red or yellow deal. It is smooth, light, and easily cloven. The bark will tan leather.—The inhabitants of the North of Europe make bread from this tree in the following manner. They choose a tree whose trunk is even, for these contain the least resin, and strip off the bark in the spring when it separates most readily. This they first dry gently in the shade; then in a greater heat; and reduce it to powder. With this powder they mix a small quantity of corn-meal, and with water knead it into bread. This they eat, not only in years of scarcity, but at other times, from an apprehension that long disuse might render it disagreeable to them. Their children are very fond of the fresh bark in the spring time, ether shaved with a knife or grated with a rasp—the young shoots distilled afford a fragrant essential oil.—Sheep and goats are not fond of it; horses refuse it.—It affords nourishment to the *Phalæna Pini, quadra*; *Circulio Pini*, and *Cimex Abietis.*

CLASS XVII.

DIADELPHIA.

HEXANDRIA.

FUMA'RIA. *Cal.* 2 leaves: *Bloss.* gaping, bulging, at the base, and containing honey: *Filaments* with 3 anthers.

OCTANDRIA.

POLY'GALA. *Cal.* with 2 segments like wings: *Bloss.* standard cylindrical: *Stamens* connected: *Caps.* inversely heart-shaped, 2-celled.

DECANDRIA.

(1) *Stamens all united.*

SPAR'TIUM. *Filaments* adhering to the germen: *Summit* hairy, growing to the upper side of the style.

GENIS'TA. *Pistil* pressing down the keel: *Summit* rolled inwards.

ANTHYL'LIS. *Cup* swoln and turgid; inclosing the legumen.

U'LEX. *Cup* 2 leaves: *Legumen* hardly longer than the cup.

ONO'NIS. *Legumen* diamond-shaped, sitting: *Standard* scored.

(2) *Summit downy*: *Filaments* 9 *united*; 1 *distinct*.

O'ROBUS. *Style* slender, nearly cylindrical; woolly on the upper or inner side.

PI'SUM. *Style* keeled, woolly above.

LATH'YRUS. *Style* flat, and woolly above.

VI'CIA. *Style* bearded under the *Summit*.

(3) *Legumen 2-celled.*

ASTRA'GALUS. *Legumen* 2-celled, curved.

(4) *Legumen with about* 1 *seed.*

TRIFO'LIUM. *Legumen* longer than the cup; with 1 or 2 seeds: flowers (mostly) in heads.

[Medicago lupulina. Hedysarum Onobrychis.]

(5) *Legumens almost jointed; sometimes spiral.* ST.

HEDY'SARUM. *Legumen* with roundish compressed joints: *Keel* very blunt.

ORNI'THOPUS. *Legumen* jointed; bent like a bow.

HIPPOCRE'PIS. *Legumen* compressed; membranaceous; 1 of the seams hollowed out with very deep notches.

MEDICA'GO. *Legumen* spiral; membranaceous: compressed; *Pistil* pressing down the keel.

(6) *Legumen of* 1 *cell; with* 2 *or more seeds: (without the marks of the former subdivisions.)*

ER'VUM. *Cup* with 5 divisions, nearly equal; and nearly as long as the blossom.

LO'TUS. *Legumen* cylindrical; filled with cylindrical seeds.

Linnæus also gives us the following natural arrangement of the different genera.

WINGED WITHOUT AN ODD LEAFIT. *Orobus, Pisum, Lathyrus, Vicia, Ervum.*

WINGED WITH AN ODD LEAFIT. *Astragalus, Hedysarum.*

WITH THREE LEAFITS. *Trifolium, Lotus, Medicago, Genista, Ononis.*

FLOWERS IN UMBELS. *Lotus, Ornithopus, Hippocrepis.*

HEXANDRIA.

FUMA'RIA. *Calyx* 2-leaved: *bloss.* gaping: *filaments* 2, membranaceous, each supporting 3 anthers: *caps.* 1-celled; many seeded.

interme'dia. F. Root bulbous solid: stem simple: floral-leaves hand-shaped, as long as the blossom.

PLATE XXIX.

Flowers purplish red, and yellow, forming a loose spike. Floral-leaves divided into finger-like segments. *S. Vess.* oblong egg-shaped, opening at the bottom, 4 or 6 seeds in each. *F. bulbosa.* β Linn. *F. minor.* Gmelin.

This plant was first sent to me by Mr. Hall, then by Mr. Gough, and afterwards by Mr. Robson. The former found it in [Levans Park, 5 miles from Kendal. Wattsfield, ½ a mile from Kendal, amongst a clump of tall trees, plentiful. Mr. Gough. Near Ulverstone; also between Cartmel and Kendal. Mr. Robson. At Perry Hall, near Birmingham, in a meadow between the House and the River. Mr. Pitt. At Blithfield, Staffordsh. Hon. Mr. Bagot. In a wood at Wickham, near Fareham, Hants. Mr. Garnier. P. March, April.

lu'tea. F. Legumens strap-shaped: 4-sided: stems spreading, the angles acute.

E. bot. 588.

Segments of the leaves ending in a little point. *Fruit-stalks* about half the length of the flower; *Floral-leaf* strap-spear-shaped, about one third the length of the fruit-stalk. *Bloss.* yellow.

Yellow Fumitory. First found in England by Mr. Howard, growing on old walls near Castleton in Derbyshire. [Holmhead near Giggleswick, Yorksh. growing wild in great abundance. Mr. Gough.—Fountain's Abbey. Mr. Robson.]

officina'lis. F. Seed-vessels in bunches, 1 seed in each: stem spreading.

Ludw. 83–*Curt.* 112–*E. bot.* 589–*Matth.* 1158–*Riv. tetr.* 1–*Kniph.* 1–*Woodv.* 88–*Fl. dan.* 940–*Fuchs.* 338–*J. B.* iii. *a.* 201–*Blackw.* 237–*Walc.*–*Ger.* 927. 1–*Lonic.* i. 166. 2–*Dod.* 59–*Lob. obs.* 437. 3, *and ic.* i. 757. 1–*Ger.* 1088. 1–*Park.* 287. 1–*Trag.* 110–*Mill.* 136. 2–*H. ox.*–iii. 12. 9.

Fumaria intermedia.

Fumaria capreolata.

Pouch roundish, falling off. LINN. *Stem* smooth. *Leaves* smooth, somewhat fleshy, sea-green, trebly compound, the last divisions with 5 or 3 clefts, the extreme segments spear-shaped. *Flowers* alternate, in long spikes. *Fruit-stalks* very short. *Floral-leaves* spear-shaped, membranaceous, 1 at the base of each fruit-stalk. *Seed-vessel* roundish, smooth. Mr. WOODW. *Calyx* leaves coloured. *Bloss.* upper lip keeled at the back, reflected at the edges towards the end. *Nectary* distended, shorter than the fruit-stalk, inclosing a greenish tongue-shaped substance, purple at the edge. *Wings* each with 3 keel-shaped ridges near the extremity on the outer side. *Style* 3 or 4 times as long as the germen. Flowers pink and dark purple, in long terminating spike-like bunches; sometimes very pale, or nearly white.

Common Fumitory. Cornfields. Hedge banks. Gardens.
A. May—Aug.*

F. Seed-vessels in bunches, 1 seed in each: leaves climbing, sparingly furnished with tendrils. capreola'ta.

Dicks. h. s.–Curt.

PLATE XXX.

Pedicles bowed back. The extreme *leafits* running into tendrils. LINN. *Stems* longer and weaker than those of *F. officinalis*. *Leaves* more distant, not so finely divided, the extreme divisions broader and blunter. *Flowers* fewer on the spike. *Fruit-stalks* longer. Mr. WOODWARD. *Stem* sometimes trailing, and interweaving its branches among the grass, very much branched, sometimes 3 feet long. *Bloss.* pale red. ST. Clearly distinct from the F. officinalis, as I have proved by sowing the seed. The leaves frequently run into tendrils. Mr. ROBSON. Seed vessels globular.

Ramping Fumitory. Gardens, cultivated ground, and under walls with the F. officinalis. RAY. Rocks by the sea side. LIGHTF. Ditch banks. ST. A. Aug.—Oct.

F. Legumens strap-shaped: leaves with tendrils. clavicula'ta.

Fl. dan. 340–*E. bot.* 103–*Dod.* 60–*Lob. obs.* 438. 2, *and ic.* i. 758. 1–*Ger. em.* 1088. 2–*J. B.* iii. *a.* 204. 1–*Park.* 288. 6–*H. ox.* iii. 12. 3–*Ger.* 929. 5 *and* 6.

* Cows and sheep eat it. Goats are not fond of it. Horses and swine refuse it. LINN. A horse eat it. ST. The leaves are succulent, saline and bitter. The expressed juice in doses of 2 or 3 ounces, is useful in hypochondriacal, scorbutic, and cachectic habits. It corrects acidity, and strengthens the tone of the stomach. Hoffman prefers it to all other medicines as a sweetener of the blood. There is no doubt of its utility in obstructions of the viscera, and the diseases arising therefrom. An infusion of the leaves is used as a cosmetic to remove freckles and clear the skin. Mr. WOODWARD.

Tendrils from the ends of the leaves. LINN. *Leaf-stalks* often crooked. *Tendrils* generally forked, and sometimes with 2 minute leaves near the end. *Spikes* lateral. *Fruit-stalks* straight, naked. *Legumens* with 2 seeds. Mr. WOOD. *Flowers* few, yellow. *Spikes* short. Mr. WOODWARD. *Stems* 3-cornered, slender, purplish at the base. *Leafits* egg-spear-shaped, ending in a sharp flexible point. *Spikes* towards the top of the stem or branches, of about 5 flowers, seldom more than 2 of which come to perfection. *Calyx leaves* inversely heart-shaped, white, very small. *Bloss. standard* oblong, concave, reflected at the end, not notched; *Nectary* blunt; *keel* a little concave at the top, and reflected at the edges. *Filaments*, 1 fixed to the standard, the other to the base of the 2 wings and uniting them. *Germen* heart-shaped; *style* crooked; *summit* flat, and ragged. *Seed-vessel* oblong, tapering, with 1 to 3 seeds. The shape of the S. Vess. at once distinguishes this from the 2 preceding species. The colour of the flowers varies from greenish to a yellowish white, and sometimes they have a purple tinge.

Climbing Fumitory. Woods and moist hedges, boggy and rocky places, in a sandy soil, and on the banks of lakes and rivers. [Among the rocks of Stonehall, near Rawdon, 7 miles from Leeds. Mr. WOOD. Rough stony places above Great Malvern Tower. NASH. Mr. BALLARD. Thorpe, near Norwich, WOODWARD. In a marsh on the East side of Kendal Castle. Mr. GOUGH. Thatched houses in many parts of the islands of Scotland quite covered with it. Mr. BROWN. Among loose stones on the N. E. side of the Wrekin. Mr. AIKIN. Dry stony places in Furness Fells. Mr. ATKINSON. On Malvern hill, above the spring. In some of the least frequented lanes about Birmingham.] A. June—Sept.

OCTANDRIA.

POLYG'ALA. *Calyx* 5 leaved, 2 larger wing-like, before the ripening of the seeds, coloured: *caps.* inversely heart-shaped, 2-celled: seeds solitary.

vulga'ris. P. Flowers in bunches: stems herbaceous, simple, trailing: leaves strap-spear-shaped.

Walc.–Fl. dan. 516–*Kniph.* 11–*E. bot.* 76–*J. B.* iii. 386. 3 *and* 4–*Dod.* 253–*Lob. obs.* 228. 1, *and ic.* i. 416. 2–*Ger. em.* 564–*Park.* 1332. 2–*Trag.* 571–*Lonic.* i. 183. 1–*J. B.* iii. 362–*Lob. ic.* i. 417. 1–*Ger. em.* 563. 3–*Ger.* 449. 4.

Stem with us never nearly upright. *Flowers* with a pencil-shaped appendage. LINN. *Stem* 4-cornered, undivided. *Leaves* alternate, or in pairs, a little rolled back at the edges, the upper spear-shaped, the lower egg-shaped. *Calyx leaves* spear-shaped, concave, coloured. *Bloss. wings* spear-shaped, more fully coloured than the calyx; *standard* composed of 2 petals, joined by a hairiness at the edges; *keel* cylindrical below, but towards the top expanding into 2 sets of club-shaped glandular appendages. *Filaments* in 2 sets, like 2 expanded hands, with 4 fingers to each. *Anthers* yellow, or orange. *Style* thicker upwards. *Summit* with 2 lips the one a fleshy knob, the other spear-shaped, concave. *Seed-vessel* bordered. *Bunches* terminating. *Bloss.* blue, or purple, or flesh coloured, or white. With us it sometimes grows quite upright.

Common Milkwort. Pastures and heaths, common.

P. June, July.*

DECANDRIA.

SPAR'TIUM. *Cal.* extending downwards; 2-lipped: *filaments* adhering to the germen: *summit* woolly above.

S. Leaves in threes, and solitary: branches without prickles, angular. scopa'rium.

Curt.–Kniph. 3–*Riv. tetr.* 63. 1, *Genista.–Woodv.* 89–*Fl. dan.* 313–*Blackw.* 244–*Sheldr.* 7–*Dod.* 761. 1–*Lob. obs.* 531. 1, *and ic.* ii. 89. 1–*Ger. em.* 1311. 1–*Park.* 229. 1–*Ger.* 1130. 1–*Fuchs.* 219–*J. B.* i. *b.* 388. 3–*Trag.* 961–*Lonic.* i. 39. 2.

Calyx the lip beneath the keel with 3, the other with 2 very short teeth. RELHAN. *Legumen* fringed at the edge with long soft hairs. WOODWARD. *Leaves* and *leaf-stalks* slightly hairy. *Calyx* the upper segment with 2 teeth larger than those of the lower. *Bloss. standard* nearly circular, slightly notched at the end; *keel*, the petals rather hooked, united at the lower edge by an intertexture of very fine, soft, woolly hairs. *Stamens*, 4 long and 6 short. *Style* bowed almost into a circle, and after

* Linnæus found it to possess the properties of the Senega Rattlesnake root, *(Polygala Senega)* but in an inferior degree. Duhamel used it in pleuritic cases with the desired success. *Mem. de Paris*, 1740. The powdered root may be given in doses of half a dram. Cows, goats, and sheep eat it, swine refuse it. An infusion of the herb, which, is very bitter, taken in the morning fasting, about $\frac{1}{4}$ of a pint daily, promotes expectoration, and is good for a catarrhous cough. I tried it with success. Dr. SMITH.

flowering into a spiral; the very end, which one should be inclined to regard as the summit, not hairy. *Bloss.* yellow.
Common Broom. Dry pastures. S. May, June.*

GENIS'TA. *Calyx* 2-lipped, the upper 2, the lower 3-toothed: *standard* oblong, bent back from the stamens and pistil: legumen regular-shaped.

tincto'ria. G. Branches scored, cylindrical, upright: leaves spear-shaped, smooth: legumen cylindrical.

Dicks. h. s.–Fl. dan. 526–*E. bot.* 44–*Kniph.* 6–*Fuchs.* 808–*Trag.* 604–*Dod.* 763. 1–*J. B.* i. *b.* 391–*Ger.* 1134. 1–*Clus.* i. 101. 2–*Lob. obs.* 521. 2, *and ic.* ii. 90. 2–*Ger. em.* 1316. 1–*Park.* 229. 7.

Flowers in leafy spikes. *Flower-leaves* shorter than the blossoms. *Calyx* with 5 nearly equal clefts. *Bloss. standard* egg-shaped, blunt; *wings* oblong-oval, *keel* compressed. *Summit* a little knob. *Bloss.* yellow. It is justly observed in E. bot. that in this species the seeds are numerous, and not solitary as in Gen. Pl.

Dyers Green-weed. Green-wood. Dyers-weed. Wood Waxen. Pastures and borders of cornfields. S. July, Aug.†

* The young flowers are sometimes preserved as pickles. The plant, when burnt, affords a tolerably pure alcaline salt. Dr. Mead relates the case of a dropsical patient that was cured by taking half a pint of a decoction of green Broom tops, with a spoonful of whole Mustard seed, every morning and evening. The patient had been tapped three times, and tried the usual remedies before. (*Monita et præcept. medica. p.* 138.) An infusion of the seeds, drank freely, has been known to produce similar happy effects; but, whoever expects these effects to follow in every dropsical case will be greatly deceived. I knew them succeed in one case that was truly deplorable; but out of a great number of cases, in which the medicine had a fair trial, this proved a single instance. A strong lixivium of the ashes was used in the Swedish army, in the year 1759, to cure dropsies consequential to a catarrhal epidemic fever. The urine became plentiful, and the dropsies soon disappeared. *Med. comm. vol.* i. *p.* 373. Some use the seeds toasted, so as to make a kind of coffee. The plant, when growing large, merits a place among our flowering shrubs, on account of the profusion of its golden coloured blossoms. Cows, horses, and sheep refuse it. LINN. The *Phalæna pisi* feeds upon it. When the seeds are fully ripe and the legumen becomes black, it has the power of discharging its contents to a considerable distance around by a peculiar elastick movement.

† A yellow colour may be prepared from the flowers, and for wool that is to be dyed green, the dyers prefer it to all others. A dram and a half of the powdered seeds, operates as a mild purgative. A decoction of the plant is sometimes diuretic, and therefore has proved serviceable in dropsical cases. Horses, cows, goats, and sheep eat it.

G. Leaves spear-shaped, blunt: stem with tubercles, pro- pilo'sa.
strate.

Jacq. austr. 208–*E. bot.* 208–*Kniph.* 5–*Rose* 3. 1–*Clus.* i. 103. 2–*Ger. em.* 1313. 6–*Ger.* 1132. 6–*J. B.* i. 393. 2.

Legumen with many or only 2 seeds. REICH. *Stem* and *branches* tough, lying close to the ground, even beneath the moss; *stem* much branched; the *old branches* naked, the young ones clothed with leaves. *Leaves* numerous, minute, oval, or oval-spear-shaped, entire, smooth above, with white silky hairs underneath. *Flowering-branches* ascending. *Flowers* in short spikes at the ends of the branches. *Fruit-stalks* short, hairy. *Calyx* hairy, yellowish green; lips nearly equal, pointed. *Bloss.* yellow, hairy without, excepting the wings. *Legum.* hairy. Mr. WOODWARD.

Pastures, heaths, dry and hilly places. About Lackford, 4 or 5 miles from St. Edmund's Bury. Sir J. CULLUM. Heaths near Bury, which are perfectly yellow with it when in flower, but after flowering it is with difficulty found, the stems lying so close to the ground. Mr. WOODWARD. Between Dolgelly and Llyn-Arran, at the foot of Cader Idris, about half a mile from the pool. Mr. GRIFFITH.] S. May, June.

G. Very thorny; smooth: thorns simple and compound: ang'lica.
leaves spear-shaped.

Dicks. h. s.–*E. bot.* 132–*Fl. dan.* 619–*Dod.* 760–*Lob. obs.* 535. 2, *and ic.* ii. 93. 2–*Ger. em.* 1320. 4–*Park.* 1004. 4–*Ger.* 1140. 5–*Lonic.* i. 39. 1.

The *old branches* thorny, the *flowering branches* without thorns, or with scattered thorns. RELHAN. *Stem* much branched. The *old branches* tough, without leaves, beset with thorns; thorns very sharp, slender, $\frac{1}{4}$ to $\frac{1}{2}$ an inch long; the shoots of the year in bundles at the end of the old ones, but sparingly from the sides, with numerous leaves intermixed with soft thorns. *Leaves* sometimes oval, smooth, entire, small, bright green. *Flowers* pale yellow, small, few. *Legumens* short, broad, smooth, with 3 or 4 seeds. WOODWARD, *Calyx* yellow. *Summit* a small knob. *S. vess.* with from 3 to 14 seeds.

Needle Furze. Petty Whin. Needle Greenweed. Heaths, and moist spongy ground. [Bungay Common, Suffolk. WOODW. Heaths, west of Bishops Auckland. Mr. ROBSON. New Forest, near Stoney Cross. Broadmoor, near Birmingham.]
S. May, June.

U'LEX. *Calyx* 2-leaved: *legumen* scarcely longer than the calyx.

Europæ'us. U. Calyx shorter than the blossom, with 2 spear-shaped deciduous scales at the base.

E. bot. 742–*Fl. dan.* 608–*Clus.* i. 106. 2–*Dod.* 759. 1–*Ger. em.* 1319. 1–*Park.* 1004. 1–*J. B.* i. *b.* 400. 2.

Stems and branches deeply furrowed. Leaves deciduous. *Calyx* sometimes very woolly, but not equally so in all plants. *Bloss.* yellow. Besides the pair of scales at the top of the fruit-stalk close to the calyx, there is a single scale at its base, on the outer side.

French Furze. Gorze. Common Furze. Heaths, road sides, and pastures, but does not flourish in very poor soil. Extremely luxuriant in Cornwall, growing to the height of 6 or 8 feet.

P. Feb.—Aug.

na'nus. U. Calyx about as long as the blossom, with 2 dark-coloured spots at the base.

E. bot. 743.

Stems and branches less deeply furrowed than in the preceding, and the leaves more permanent; but the best distinction is that pointed out to me by Mr. Stackhouse, who first observed that the *U. europæus* had a pair of distinct scales at the base of the calyx, which are pale and deciduous like the leaves; but that the U. *nanus* has a pair of dark-coloured spots, not deciduous. These when examined under a glass are really scales, but very minute. The calyx in this species is scarcely at all woolly. Both species vary much as to hairiness, as well as in the length of their thorns; but the luxuriant and more upright growth of the former is strongly contrasted by the dwarfish and stunted appearance of the latter.

Gorze. Dwarf Furze. Whins. On Barren Commons. Flowers all the year, but never more fully than in September and October. P.*

ONO'NIS. *Cal.* with 5 divisions; segments strap-shaped: *standard* scored: *filaments* united without an opening: *legumens* swoln, sitting, simple, of 1 cell.

* Gorze is in some respects a very hardy plant, and will make fences upon the bleaker mountains, and close to the sea side, where the spray of the sea destroys almost every other shrub; but it is impatient of cold, is often destroyed by severe frost, and is rarely found in the northern parts of our island. In Cornwall, where fuel is scarce, it is cultivated to advantage, and it is generally cut to make faggots for heating ovens, which it does very soon, burning rapidly, and with a great degree of heat. The ashes are used to make ley. Team horses may be supported by this plant, if it is cut young and bruised in a mill to break the thorns. Goats, cows, sheep, and horses feed upon the tender tops.

O. Flowers in bunches, solitary: leaves solitary or 3 toge- spino'sa.
ther; branches thorny.

Ludw. 68–*Kniph.* 5–*Sheldr.* 79–*Blackw.* 301–*Riv. tetr.* 69, *Anonis*–*H. ox.* ii. 17. *row* 1. 1. *f.* 3–*Fl. dan.* 783–*J. B.* ii. 391. 2–*Ger.* 1141. 1–*Fuchs.* 60–*Trag.* 869–*Matth.* 674–*Dod.* 743. 2–*Lob. obs.* 492. 2, *and ic.* ii. 28. 1–*Ger. em.* 1322. 1–*Park.* 994. 1–*Lonic.* i. 72. 1.

Stems lying down, woolly, reddish, thorny, especially from the base to the middle. *Thorns* awl-shaped, pungent, *with sometimes* 1 *or* 2 *leaves*. *Flowers* mostly solitary, but when 2 they are fixed to a cloven fruit-stalk. RETZ. Whole *plant* more woody and rigid than O. *arvensis*. *Stem* slightly hairy. *Branches* terminating in softish thorns. *Thorns* at the base of the young branches, strong, early in the summer not pungent. *Leaves* almost smooth. *Calyx* hairy; segments awl-shaped, unequal. *Bloss.* twice as long as the calyx. WOODWARD. In its young state, before the thorns are formed, it has frequently been mistaken for the O. *arvensis*. *Flowers* red.

Thorny Rest-harrow. Cammock. Petty Whin. Ground Furze.
Barren pastures, hedge banks, holloways, either in a sandy or a marly soil. P. July.*

O. Flowers in bunches, 2 together; leaves 3 together, the upper ones solitary: branches without thorns, somewhat woolly. arven'sis.

E. bot. 682–*Ger.* 1142. 3.

In the autumn of 1779 I examined many hundreds of *O. arvensis* in the cornfields at Berkhamsted, Hertfordshire, without finding a single one with thorns. *Stem* and *branches* woolly. *Leaves* somewhat woolly, broader, more egg-shaped, and not so elliptical as those of O. *spinosa*. *Flowers* more numerous, mostly solitary, on the young shoots, alternate. *Calyx*, segments more tapering. Mr. WOODWARD. Mr. PITT, of Pendeford, near Wolverhampton, sent me specimens which he assures me never become thorny, and that the thorny sort is never found in that neighbourhood. I found it in great plenty on St. Vincent's Rocks, without the least appearance of thorns on any of the plants, though I examined a great number. A smaller plant than the *O. spinosa*. *Stems* and *branches* woody, cylindrical, a little hairy. *Leaves* set with glandular hairs; the upper oblong-egg-shaped, toothed. *Leaf-stalks* short, fixed to a broad toothed

* A decoction of the roots has been recommended in cases of stone and jaundice. Cows and goats eat it; sheep are very fond of it; horses and swine refuse it. LINN. A horse refused the whole branch, but eat of the younger shoots when picked off. Dr. STOKES.

leaf-scale. *Flowers* scattered, intermixed with leaves. *Calyx*, some of the hairs long and tapering, others short and tipped with glands; segments, 1 of them pressing on the standard, the lowermost supporting the keel. *Bloss. standard* circular, with a small point at the end, with short hairs on the outside, of a fine rose-colour, streaked with deeper coloured lines; *wings* more than half as long as the standard, egg-shaped, white; *keel* coloured and streaked as the standard. *Anthers* yellow. *Germen* with hairs tipped with glands. *Seeds* about 6. *Flowers* sometimes nearly white. The hairiness of the leaves and the want of thorns best distinguish this from the O. *spinosa*, whose thorns are so remarkable, and whose leaves are scarcely if at all hairy on the upper surface, though in both they are edged with hair-like glands terminating in a small globule.

Hairy Rest-harrow. Ononis inermis. Huds. Mostly in light land, and cornfields. P. June.

Var. 2. Stems prostrate; whole plant clammy.

Whole *plant* clammy, not so downy as O. *arvensis*. *Flowers* larger and fewer. *Leafits* oblong wedge-shaped. *Calyx* segments shorter and blunter. Whether distinct from O. *arvensis* difficult to say, but I am inclined to Mr. Hudson's opinion, as being removed into a garden it became upright, and more downy. If a variety it is of O. *arvensis* and not of *spinosa*. WOODWARD. This has been taken for the O. *repens* of Linnæus, but Mr. Afzelius informed me that species had not been found in England, which confirms Mr. Hudson's opinion, formed after cultivating them together, that this is not specifically different from the *arvensis*. Mr Woodward describes the *arvensis* as more downy than this, but my specimens from the Southern coast are much more downy than those in the cornfields in the midland counties.

Creeping Rest harrow. Sea shore in sandy soils, frequent. LIGHTF. Field by Charlton Church, between the gravel pit and Woolwich, towards Gravesend, and on the sand downs by Deal, and near Yarmouth. RAY. [At Sandscale, and in Walney, plentiful. Common in dry sandy pastures in Low Furness. Mr. ATKINSON.] P. June, July.

ANTHYL'LIS. *Calyx* bellying: *legumen* roundish, covered.

Vulnera'ria. A. Herbaceous: leaves winged, unequal: flowers in a double head.

Dicks. h. s.–*Kniph.* 6–*Fl. dan.* 988–*E. bot.* 104–*Dill. elth.* 431. 320–*Riv. tetr.* 18. 1, *Anthyllis*–*Ger.* 1060. 1. *and* 1023. 1–*J. B.* ii. 362–*Dod.* 552. 1–*Lob. obs.* 530. 1, *and ic.* ii. 87. 2–*Ger. em.* 1240. 1–*Park.* 1093. 1.

Stems cylindrical, downy. *Leaves* downy, the hairs lying close, with 5 or 6 pair of leafits. *Flowers* sitting; deep yellow. RELHAN. Each head of flowers supported by 2 floral-leaves, the larger with 6 or 7 clefts, the smaller with 4. The structure of the filaments is very singular; towards the top they swell out like a hollow bladder, in shape of an inverted pyramid, and the anthers are fixed to the central part of the base of the pyramid. *Style* thickest at the bend, thinner above and below. In England the flowers are seldom otherwise than yellow, but in Portugal they are as uniformly scarlet.

Kidney-vetch. Ladies-finger. Meadows and pastures, in chalk or a calcareous soil. [Wick Rocks. Mr. SWAYNE. Craven, Yorkshire. Mr. CALEY. Arthur's Seat, Edinburgh. ST. Limestone pits, Cradley, near Malvern Hill, Worcestershire. Mr. BALLARD. Coast of Devonshire, common.] P. May—Aug.

Var. 2. Blossoms scarlet, or purple.

In Pembrokeshire. RAY. [On the sand banks near Llandwyn, Anglesea. Mr. GRIFFITH. In Cornwall. Mr. STACKHOUSE.]*

PI'SUM. *Calyx*, 2 upper segments shorter: *style* with 3 angles, keeled and pubescent above: *legumens* inflated.

P. Leaf-stalks flattish above: stem angular: stipulæ arrow-shaped: fruit-stalks many-flowered. marit'imum.

Smith spic. fasc. 1. 9–*Fl. dan.* 338–*Munt. phyt.* 825. 230–*Ger. em.* 1220. 5–*Park.* 1060. 4. *and* 5.

Whole *plant*, excepting the upper surface of the leaves, slightly downy. *Root* creeping. *Stems* angular. *Leaf-stalks* with many leafits, flattish above, with tendrils. *Leafits*, the outer smaller. *Leaf-scales* opposite, angular at the base on each side, scarcely toothed. LINN. *Roots* striking extremely deep in the earth. *Stems* trailing, short; the outline of the whole oval. *Leaves* numerous, alternate; *leafits* oval, alternate, sitting, smooth, the outer not always smaller, on the lower leaves 5 to 7, on the upper 9 to 11, there being always 1 more on the outer side of the leaf-stalk, generally cloven, sometimes simple. *Leaf-scales* in pairs, oval spear-shaped, broad, arrow-shaped at the base. *Flowers* towards the end of the fruit-stalks, crowded, on short pedicles. WOODWARD. *Bloss.* pale red and purple.

Sea Pea. Sea shores. On a stony beach between Aldburgh

* The country people get a yellow dye from it. It makes an excellent pasturage for sheep. Where the soil was a reddish clay Linnæus observed the blossoms to be red, but in white clay white. Goats and cows eat it.

and Orford, Suff. Ray. Woodw. Near Hastings, Sussex, and on the west side of Dengeness, near Lyd, in Kent. Ray. Rie and Pensie, Sussex; Guildford, over against the Comber; and Ingolne Mills, Lincolnshire. [On the sharp ridge running from Portland Island to Bridport, a good deal to the right of the ferry, amongst loose pebbles, about 15 or 20 feet above high water mark; but the cows eat it down so that it is difficult to procure a specimen in flower. Mr. Stackhouse.] P. Aug.*

O'ROBUS. *Calyx* blunt at the base; the 2 upper teeth shorter but more deeply divided: *style* thread-shaped.

sylvat'icus. O. Stems drooping, hairy, branched: leafits 7 to 12 pair.

Dicks. h. s.–E. bot. 518–*Lightf.* 16. *at p.* 390.

Stems branched, scored. *Leafits*, 6 or 7 pair. *Bloss.* red without, within white, with purple lines. *Legum.* compressed. *Seeds* 2 or 3. Linn. *Stems* numerous, trailing, much branched, but slightly hairy. *Leaves* winged, alternate; *leafits* oval, or elliptical, terminated by a point which is an extension of the midrib; on short hairy leaf-stalks, somewhat alternate, 6 to 12 pair, without an odd one, but with a sort of beard terminating the general leaf-stalk. *Flowers* numerous, to 12, on short pedicles, crowded, mostly pointing one way, on the top of a long naked fruit-stalk. *Stipulæ* half-arrow-shaped, 2 at the base of each general leaf-stalk, smaller than those of the O. *tuberosus*, and terminated by a more acute point. *Calyx* short, green, tinged with red, fringed, somewhat lipped, lips nearly equal, the upper with 2 teeth, the lower with 3, rather longer. *Bloss.* long and narrow. *Legum.* short, smooth. Mr. Woodward.

Bitter Vetch. Wood Peaseling. Woods, hedges, pastures, dry rocky places, and banks of Rivers. Ten miles from Penrith; Gamblesby, Cumberland. Ray. Mr. Woodward. Below Brecknock Hills in the way to Cardiff, and not far from Bala, Merionethshire. Upper part of Merley Wood, near Oxford. Near Ross-Trevor, Ireland. Ray. [Woods about Airly Castle, Mr. Don. On the Tweed, about $\frac{1}{2}$ a mile below the Buld. Dr. Hope. About Cerrig y Druidion, and Y s pytty, Denbighshire. Mr. Griffith.] P. May—July.

tubero'sus. O. Leaves winged, spear-shaped: stipulæ half-arrow-shaped, very entire; stem simple.

* In 1555, during a time of great scarcity, the people about Orford in Sussex, were preserved from perishing by eating the seeds of this plant, which grew there in great abundance upon the sea coast. Cows, horses, sheep, and goats eat it. It affords nourishment to the *Phalæna pisi*.

Dicks. h. s.–Curt.–Riv. tetr. 59, *Orob. rad. tub.–Sibbald.* 1–*Ger. em.* 1237. 2–*H. ox.* ii. 21, *row* 2. *f.* 3–*Fl. dan.* 781–*Thal.* 1–*Park.* 1062. 5.

Stems at first drooping, but upright when in flower. LINN. *Leafits* 1 to 3 pairs, sitting, elliptical, the upper ones narrower and nearly strap-shaped, without an odd one, but the leaf-stalk is extended into a sort of point. *Stipulæ* in pairs at the base of the leaf-stalks. *Flowers* 4 or 5 in a bunch, on short slender pedicles. Mr. WOODWARD. *Stems* with 2 or 3 membranaceous leafy edges. *Leafits* with 3 longitudinal veins, and terminated by a sharp point. *Style* strap-shaped, not pointed at the end. *Seeds* compressed, about 12. *Blossoms* purple, 3 or 4 together. *Legum.* flat, black, pendant.

Heath Peaseling. Moist heaths and woody meadows, not rare. P. Apr. May.*

LA'THYRUS. *Cal.* 2 upper segments shorter: *style* flat, broader upwards, woolly on the upper surface: *legumen* generally equal, broad.

(1) *Fruit-stalks* 1-*flowered.* [L. hirsutus.]

L. Tendrils without leaves: stipulæ arrow-heart-shaped. Aph'aca.

Curt.–Gies. 41–*Mill. ill.* 43–*Lob. obs.* 518. 1, *and ic.* ii. 70. 1–*Ger. em.* 1250–*Park.* 1067–*H. ox.* ii. 4. 7.

Stems 4-cornered, trailing. *Stipulæ* oval-spear-shaped, arrow-shaped at the base, in pairs, smooth, somewhat sea-green, marked underneath with numerous parallel ribs, larger towards the top of the stem. *Fruit-stalks* long, from the bosom of the leaf-scales, alternate. *Tendrils* solitary, simple, opposite to the fruit-stalks. *Floral-leaves* awl-shaped, minute, 1 at the base of each flower. *Cal.* divided almost to the base; *segments* equal, smooth, nearly as long as the blossom, strap-spear-shaped. *Blosss.* greenish yellow at the base. Mr. WOODWARD. The stipulæ in this plant supply the place of leaves, and as such they might be considered, but the real leaves are very minute, and only exist, according to Mr. Curtis, for a short time after the sprouting of the seed. *Flowers* yellow.

* The roots, when boiled, are savoury and nutritious; ground to powder they may be made into bread. They are held in esteem by the Highlanders of Scotland, who chew them, as our people do tobacco, and find that they prevent the uneasy sensation of hunger. They imagine that they promote expectoration, and are very efficacious in curing disorders of the lungs. They know how to prepare an intoxicating liquor from them. *Penn. tour.* 1772. p. 310. *Ray's hist. plant.* p. 916. Horses, cows, goats, and sheep eat it.

Yellow Vetchling. Sandy cornfields and meadows. [Histon, near Cambridge, and between Norwich and Bungay. Woodw.] A. June—Sept.*

Nisso'lia. L. Leaves simple: stipulæ awl-shaped.

Curt.–E. bot. 112–*Buxb.* iii. 45. 1–*Dod.* 529. 1–*Lob. obs.* 518. 2, *and ic.* ii. 71. 1–*Ger. em.* 1249. 2–*Park.* 1079. 4–*J. B.* ii. 309. 1.

Stem upright. *Tendrils* none. *Leaf-scales* very small. Linn. *Stem* upright, simple, angular, twisted, lightly hairy. *Leaves* alternate, smooth, sword-shaped, resembling those of Grass. *Stipulæ* in pairs, at the base of the leaves. *Fruit-stalks* axillary, slightly hairy. *Flower-scales* awl-shaped, small, one at the base of each flower. *Bloss.* beautiful crimson. *Legum.* strap-shaped, bending downward, slightly downy, terminated by a straight style. Woodward.

Crimson Grass Vetch, or *Vetchling*. Borders of cornfields and pastures. [Ripton, Huntingdonshire. Mr. Woodward. Woods at Belmont, Staffordshire. Mr. Pitt. Hadsor Wood, near Droitwich. Mr. Baker. About Teignmouth. Mr. Martyn. Borders of a cornfield near Wick Clifts. Mr. Swayne. Cotonfield, Stafford, in the hedge bank on the upper part. A. May.

The leaves are so like those of grass, that unless the plant be in flower it may be readily overlooked. It is very beautiful, and merits a place in our gardens.

(2) *Fruit-stalks with more than* 1 *flower.*

hirsu'tus. L. Fruit-stalks mostly 2-flowered: tendrils with 2 leaves: legumens hairy: seeds rough.

J. B. ii. 305–*Riv. tetr.* 41, *L. siliquis hirsutis.*

Flowers purple. Linn. *Stems* angular, twisted, slightly hairy. *Leafits*, a single pair, slightly hairy, with 3 strong ribs, terminated by an awn. *Leaf-stalks* triangular, furrowed above, terminating by a tendril. *Tendrils* mostly dividing into 3. *Stipulæ* half-arrow-shaped, pointed, with long appendages, 2 at the base of each leaf-stalk. *Fruit-stalks* very long. *Flowers* at about 1 or 1½ inch from each other. *Flower-scales* awl-shaped, small, about ¼th of an inch beneath the terminating flower, and at the base of the short pedicle of the lower. *Calyx* 1-3d as long as the blossom; clefts extending half way down; segments 5, equal. *Pods* short, covered with hair, each hair proceeding from a gland. Woodw. *Bloss.* with yellow lines within.

* The seeds, both of this and of all the other species, are nutritious, either eaten in broth or made into bread.

Rough-podded Vetchling. Cornfields and ditch banks. Fields about Hockley and Rayleigh; and elsewhere in Rochford, Essex. Near Munden Church and Laydon Hall in Denyg Hundred, Essex. BLACKST. [On the sides of two hills, the one north of Pensford, on the Bristol road, the other between Pensford and Keynsham, Somersetshire. Mr. SWAYNE.] A. July.

(3) *Fruit-stalks many-flowered.*

L. Tendrils with 2 leaves, quite simple: leafits spear-shaped. LINN. *Tendrils sometimes* 3-*cleft*, LINN. *and sometimes with* 2. WOODW. — pratensis.

Kniph. 11–*Curt.* 170–*E. bot.* 670–*Riv. tetr.* 43, *L. pratensis* –*Fl. dan.* 527–*J. B.* ii. 304. 2–*Walc.*–*H. ox.* ii. 2. 2–*Anderson*–*Lob. obs.* 517. 3, *and ic.* ii. 69. 2–*Ger. em.* 1231. 6–*Park.* 1061. 1.

Leafits between coiled and rolled inwards. *Stipulæ* very entire, halberd-shaped. *Fruit-stalks* 4-cornered. LINN. *Stem* much branched. *Leaves* smooth. *Leaf-stalks* furrowed, 3-cornered, terminating in tendrils. *Stipulæ* spear-arrow-shaped, large, in pairs at the base of each leaf-stalk. *Fruit-stalks* long, with 4, 5, or more flowers. *Pedicles* short, hairy. *Flower-scales* awl-shaped, very minute, 1 at the base of each pedicle. *Calyx* 1-3d as long as the blossom, somewhat hairy, cloven half way down; segments rather unequal. *Legum.* black, smooth. WOODW. *Bloss.* yellow; *standard* with 6 or 7 purple lines just above the claw. *Anthers* oblong.

Tare Everlasting. Common Yellow, or *Meadow Vetchling.* Meadows, pastures, woods, thickets, and hedges. P. July, Aug.*

L. Tendrils with 2 leaves: leafits sword-shaped: stem with membranaceous borders between the knots. — sylvestris.

E. bot. 805–*Riv. tetr.* 39, *L. sylvaticus. very large*–*Clus.* ii. 229. 2–*Lob. obs.* 517. 1, *and ic.* ii. 68. 2–*Ger. em.* 1229. 1–*Park.* 1063. 3–*Fuchs.* 572–*Trag.* 613–*Dod.* 523. 2–*J. B.* ii. 302. 2–*H. ox.* ii. 2. 4.

Stems widely spreading, climbing, or trailing. *Leaf-stalks* rough at the edge. *Leafits* strap-shaped, not broader than the stem. *Stipulæ* awl-shaped, very narrow. LINN. *Flowers* not more than 6 in a bunch, as small again as those of *L. latifolius* HALL. *Stipulæ* half-arrow-shaped, in pairs. *Tendrils* cloven

* L. pratensis has been recommended as a new plant for the experiments of the farmers, and premiums have been offered for its cultivation. But it does not seem to be a plant at all agreeable to cattle, as where they have a choice of food they seldom touch it. Besides, it produces very few seeds, and those are for the most part devoured by a species of Curculio. Mr. SWAYNE.

into 3. *Floral-leaves* awl-shaped, 1 at the base of each pedicle. Woodw.

Var. 2. Leaves broader than the stem. Bloss. red and white.

The leaves are sometimes even broader than those of the next species, and have m re than three ribs, but the stipulæ are always narrower than the stem in this species, and always broader in the *latif lius*. The flowers in the *latifolius* are considerably larger and more numerous than in the *sylvestris*.

Narrow-leaved Pease-everlasting, or *Vetchling*. Woods and hedges. Between Castle Campes and Bartlow, Cambridgeshire. Ray. Between Bath and Bristol, and Conway, Wales. Huds. Wood sides between Pershore and Eckington. Worcestershire. Nash. [Shelton Bank near Salop. Mr. Aikin. On a hill near Pensford, with L. *hirsutus*. Mr. Swayne.] P. July, Aug.

latifo'lius. L. Tendrils with 2 leafits: leafits spear-shaped: stem with membranaceous borders between the knots.

Mill. ill.–Fl. dan. 785 *and* 325–*Riv. tetr.* 40, *L. narbonensis–Garid.* 108. *at p.* 300–*Matth.* 971.

Leafits rolled in, elliptical, several times broader than the stem, sometimes 4. *Stipulæ* broader than the stem, nearly halberd-shaped. Linn. *Leaves* with 4 or 5 ribs; varying much in breadth, but always broader than the stem. *Bloss.* pale purplish rose-colour.

Broad-leaved Pease-everlasting, or *Vetchling*. Woods and hedges. Modingley, Eversden, and Kingston Woods, near Cambridge. Rocks near Red Neese by Whitehaven. [Severn Stoke Copse, Worcestershire. Mr. Ballard.] P. July, Aug.*

palus'tris. L. Tendrils with many leafits: stipulæ spear-shaped.

E. bot. 169–*Fl. dan.* 399–*Pluk.* 71. 2–*Rupp.* 1. *at p.* 210.

Stem with leafy borders. *Leafits* 6, spear-shaped. *Stipulæ* half-arrow-shaped. *Fruit-stalks* with generally 3 flowers. *Bloss.* blue. Retz. Whole *plant* smooth. *Stems* with somewhat membranaceous edges. *Leafits* 2 or 3 pair, spear-shaped. *Tendrils* 3-cleft. *Flowers* 3 to 6 or more, pointing one way. Woodw. *Bloss.* blue purple.

Chickling Vetch. Marsh Vetchling. Moist meadows and pastures. Peckham Field on the back of Southwark. Ray. Wood near Abingdon. Blackstone. Charley Forest, near Bardon Hill, Leicestersh. Dr. Poultney. Lancashire and Yorksh. Huds. Near Ranaugh, Norfolk. Mr. Humphry. P. July, Aug.

* The beauty of its flowers has obtained it a place in our shrubberies and flower borders. Dr. Stokes.

VI'CIA. *Summit* bearded across underneath: *legumen* generally with knot-like protuberances.

(1) *Fruit-stalks long; many-flowered.*

V. Leafits oval: stipulæ finely toothed. sylvat'ica.

Dicks. h. s.–Fl. dan. 277–*E. bot.* 79–*Pluk.* 71. 1–*Hall.* 12. 2. *at* i. *p.* 172.

Stems numerous, and so much branched that they choak whatever plants they come near. *Leaves* with 8 or 9 pair of leafits, and terminated by a long and very much branched tendril; *leafits* egg-shaped, oftener alternate than opposite; smooth, with a network of veins, and terminated by a short point. *Stipulæ* in pairs, small, deeply divided into several awl-shaped segments. *Fruit-stalks* long, thick, 4-cornered, and scored; upright. *Flowers* numerous, on the upper part of the fruit-stalk pendent, growing irregularly, mostly in two's and three's, with interruptions. *Calyx*, teeth awl-shaped. *Bloss.* rather large: *standard* and *wings* whitish, beautifully veined and streaked with blue. Mr. WOODWARD. *Bloss. standard without a sharp point in the notch*; *keel* not shorter than the wings. *Style* and *summit* so slender that one cannot certainly discern the beard on the under side at the end.

Wood Vetch. [Malham, near Settle, Yorkshire, and elsewhere in the North. WOODWARD. Thicket on the North side of Bredon Hill, Worcestershire. NASH. Orton, Cumberland; Barrowfield Wood, near Kendal. WOODWARD. Woods about Clifton upon Teme, Worcestershire, in moist places. Sr. Shelton bank near Salop. Mr. AIKIN. Woods on a limestone about Newton Cartmel for a few years after the woods have been cut down. Mr. HALL. Urswick Woods, climbing up the trees for several yards, so as to be very ornamental. Mr. ATKINSON. Beech Wood, close by the monument on Lansdown, Bath. It is the most beautiful climber of this island, both the leaves and the flowers being extremely elegant. Mr. SWAYNE. P. July, Aug.

V. Flowers tiled: leafits spear-shaped, pubescent: stipulæ entire. Crac'ca.

Kniph. 10–*Curt.* 310–*Fl. dan.* 804–*Riv. tetr.* 49, *Cracca–H. ox.* ii. 4. 1.

Leafits rolled in. In cornfields large and luxuriant, in meadows small and hoary. *Bloss.* sometimes white. LINN. *Stem* when climbing on bushes 3 or 4 feet high, 4-cornered, scored. slightly hairy. *Branches* numerous, short, alternate, from the bosom of the upper-leaves. *Leaves* alternate, very long; *leafits* strap-spear-shaped, oftener alternate than opposite, hairy, terminated by a short point, from 10 to 12 pair. *Tendril* terminating

the leaf-stalk, branched. *Stipulæ* half-arrow-shaped, pointed. *Calyx* bluish, the 2 upper teeth extremely short, the lowermost longest. *Flowers* small, very numerous, pendent, closely tiled. Woodward. *Stem* angular, scored, very long, climbing. *Leafits* rounded at the end, and terminated by a sharp point. *Tendrils* terminating the leaf-stalks. *Fruit-stalks* from the bosom of the leaves, longer than the leaves. *Bloss.* bluish purple, with 2 deeper purple spots at the extremity of the keel; *standard* heart-shaped, without a sharp point in the notch. *Legumen* with 5 seeds.

Tufted Vetch. Hedges, shady places, meadows, fields, [and willow beds. St.] P. July. Aug.*

(2) *Flowers 2 or more together, nearly sitting.*

sati'va. V. Legumens mostly in pairs, upright: leafits inversely spear-shaped, blunt, notched: stipulæ toothed: seeds compressed.

E. bot. 334–*Kniph.* 1–*Walc.*–*Riv. tetr.* 55, *Vicia.*–*Fl. dan.* 522–*Clus.* ii. 235. 1–*Dod.* 531. 1–*Lob. obs.* 522. 3, *and ic.* ii. 75. 1–*Ger. em.* 1227. 1–*Park.* 1072. 1–*H. ox.* ii. 4. 12–*J. B.* ii. 310. 2.

Stipulæ marked underneath with a spot as though it had been burnt. Linn. *Stem* upright, scored. *Leaves* winged; *leafits* about 6 pair, opposite, elliptical, blunt, the mid-rib lengthened into a projecting point. *Tendril* terminating the leaf-stalk, branched. *Stipulæ* in pairs, spear-shaped, toothed, marked with a black shining spot. *Flowers* mostly 2 together. *Bloss.* reddish purple. Woodward. *Cal.* teeth nearly equal. *Seeds* black.

Common Vetch. Fetch. Tare. Dry meadows, pastures, and cornfields. A. Apr.—June.†

Var. 2. Huds. Seeds white.

Var. 3. Leaves narrower, somewhat strap-shaped. Linn.

Riv. tetr. 54, *V. angustif.*–*Dod.* 542. 2–*Lob. obs.* 522. 3, *and ic.* ii. 75. 2–*Ger. em.* 1227. 4–*Park.* 1071. 1–*H. ox.* ii. 4. 11–*J. B.* 312.

More common than var. 1. So nearly allied to it that there scarcely seems to be any fixed limits between them. Linn. *Stem* trailing. *Leafits* more pointed. *Stipulæ* marked, but less distinctly, with the burnt dots. *Flowers* mostly solitary, but of

* Dr. Plot, in his *Nat. Hist. of Staffordsh.* p. 204, says, that this and the preceding species advance starven or weak cattle above any thing yet known.

† In Gloucestershire and Worcestershire they sow it as pasturage for Horses, and eat it off early enough to allow of Turneps being sown the same year. The seeds are excellent food for Pigeons. Horses, cows, sheep, and goats eat it.

the same colour with those of var. 1. It is clearly a variety of V. *sativa*, as it may be traced through all its stages from its smallest size up to the largest plants of V. *sativa*. Mr. Woodw. *Stems* scored, undivided. *Tendrils* 3-cleft. *Leafits* of the lower-leaves heart-shaped, 2 or 3 pair; those of the upper 4 or 5 pair, strap-shaped, blunt at the end, the mid-rib lengthened out into a thorn-like point. *Bloss.* purple. *Seeds* 10 to 12.

V. *latbyroides* β, and possibly α Huds. Mr. Woodward.

Dr. Sibthorpe considers this as a distinct species, and gives the following specific character. V. *angustifolia*. Legumens nearly sitting, about 2 together, expanding: lower leafits inversely heart-shaped, with a point in the notch; upper ones strap-shaped. *Fl. ox.* A. June.

Shotover, and divers other places. Ray. [In the lanes in the valleys of Dartmoor.] A. May.

V. Legumens mostly 4 together, upright: leafits egg- se'pium.
shaped, very entire, the outer ones gradually smaller.

Kniph. 3–*Riv. tetr.* 56, *V. sepium*.–*Fl. dan.* 699–*Walc.*–*Trag.* 624–*J. B.* ii. 313. 2–*Ger.* 1052. 1. *and em.* 1227. 2–*Fuchs.* 110–*Matth.* 547–*Anderson*–*Lonic.* i. 248. 1.

Leaves doubled together. *Bunches* shorter than the leaves, with mostly 4 flowers. Linn. *Stems* upright. *Leaves* alternate, winged; *leafits* sometimes egg-spear-shaped, opposite; mid-rib lengthened out into a projecting point. *Stipulæ* half-arrow-shaped, pointed, small. *Tendril* branched, terminating. *Flowers* 3 or 4, in the bosom of the upper-leaves. *Cal.* segments nearly equal. *Bloss.* dirty purple. Mr. Woodw. *Cal.* rough with hair. *Flowers* on very short fruit-stalks; sometimes white.

Bush Vetch. Woods, hedges, pastures, meadows.

P. May, June.*

(3) *Flowers solitary, nearly sitting.*

V. Legumens solitary, upright, smooth: leafits about 6, lathyroi'des.
the lower ones inversely heart-shaped: stipulæ half-arrow-shaped, very entire: seeds cubic, warty.
E. bot.

* Shoots earlier in the spring than any other plant eaten by cattle, vegetates late in the autumn, and continues green all winter. But it is difficult to collect the seeds, as the pods burst and scatter them about, and moreover, hardly a third part of them will vegetate, being made the nidus of an insect. A patch of them sown in drills in a garden was cut 5 times in the course of the second year, and produced at the rate of 24 tons per acre of green food, which when dry would weigh near $4\frac{1}{2}$ tons. Bath. Soc. iii. Mr. Swayne, who has since observed to me that though very palatable to all kinds of cattle, it is difficult to cultivate on a large scale, the seeds being generally devoured by the larvæ of a species of Attelabus, which larvæ are the prey of a species of Ichneumon.

Dicks. h. s.–Jacq. mis. ii. 18–*E. bot.* 30–*Fl. dan.* 58–*Riv. tetr.* 169. *V. minima.–Kniph.* 3–*Herm. par.* 242.

Stipulæ not spotted. ST. Whole plant hairy except the S. vessels. *Root* small, fibrous, annual. *Stems* several, a foot high or less; weak trailing. *Leafits* 4 to 6 pair, and never more; opposite, the upper ones mostly spear-shaped. *Tendrils* never branched. *Stipulæ* half-arrow-shaped, the upper spear-shaped, narrow pointed. *Flowers* small, bluish purple. *Legum.* upright, smooth, dotted. *Seeds* cubic.

The true leading characters of this species are, the blossom being scarcely longer than the calyx, the seeds cubic, and the tendril never branched. WOODWARD. In the fig. of E. bot. Fl. dan. and Kniphoffius, the tendrils are wanting; in those of Jacquin and Rivinus they are represented as unbranched, agreeable to Mr. Woodward's observation, but in Dickson's specimens publised in his 4th fasciculus of dried plants, the tendrils are branched.

Vicia lathyroides, var. γ HUDS. *Ervum soloniense* Sp. pl. Dr. Smith informs us is no other than this plant, and that it sometimes bears white flowers.

Strangle Vetch, or *Tare*. Dry pastures, gravel pits, and cornfields, in gravelly, sandy, and chalky soils. King's Park, Edinburgh. LIGHTF. ST. In the dry parts of Hyde Park. Mr. DICKSON. [Norfolk. Mr. WOODWARD.] A. May.

lu'tea. V. Legumens sitting, bent back, hairy, solitary; with 5 seeds: standard smooth. LINN.

E. bot. 481–*H. ox.* ii. 21. *row.* 2. *f.* 2–*J. B.* ii. 313. 1.

Leaves sometimes spear-shaped, sometimes dented. *Legum.* hairy or smooth. *Stipulæ* alternately very entire, or with 3 teeth. LINN. *Leaves* either inversely heart-shaped, dented, oblong, or spear-shaped. *Flowers* sometimes in pairs. HUDS. *Leaves* alternate; *leafits* 3 to 5 pair, mostly alternate, oblong, blunt, and dented, or strap-spear-shaped. *Stipulæ* spear-shaped, minute. *Tendrils* terminating, simple, or divided into 2 or 3. *Bloss.* pale yellow. *S. vess.* woolly. WOODWARD.

Yellow Vetch. About Weymouth. A. June, July.

hy'brida. V. Legumens sitting, bent back, hairy, with 5 seeds: standard woolly.

Jacq. hort. 146–*E. bot.* 482–*J. B.* ii. 314. 1.

Nearly allied to *V. lutea*. *Leafits* inversely egg-shaped, dented, small, sprinkled with hairs. *Stipulæ* of the stem not brown, but entirely green. *Flowers* yellow, greyish above, hairy. In other respects accords with *V. lutea*. LINN. This

plant certainly accords with V. hybrida of E. bot. and is perfectly distinct from the V. lævigata.

Bastard Vetch. Meadows and pastures. Glastonbury Tor. P. June—Aug.

V. Legumens sitting, solitary, bent back, smooth. Stems lævigata. upright. Stipulæ greenish. Leaves smooth.

E. bot. 483.

Leaves and whole plant entirely smooth. *Stipulæ* green, or pale brown. *Flowers* like those of the *lutea*, but their calyx-teeth are generally more equal in length. In colour they are for the most part less yellow, and sometimes quite blue, as represented in the figure, but both species are extremely variable in that respect. *Legumens* quite smooth in every stage of their growth, and contain rarely more than five seeds. (E. bot.)

Smooth-podded Sea Vetch. About Weymouth. P. July—Sept.

V. Legumens on fruit-stalks, solitary, upright: leafits 4, bythynica. oval-spear-shaped: stipulæ toothed.

Jacq. hort. 147–*Allioni* 26. 2.

Seeds protuberating. *Flowers*, standard and keel red purple, wings yellowish.

Rough Vetch. Gravelly cornfields and pastures, and ditch banks near Doncaster, Yorkshire. Isle of Purbeck. [Woods near Clifton upon Teme, Worcestershire. Sr. Portland Island half a mile to the left of the Ferry, on loose sand banks. Mr. Stackhouse.] P. July.

ERVUM. *Calyx* with 5 divisions, as long as the blossom.

E. Fruit-stalks mostly 2-flowered; seeds 4, globular. tetraspermum.

Curt.–Riv. tetr. 53, *Cracca minor siliquis gemell.–Ger.* 1052. 2–*Fl. dan.* 95–*J. B.* ii. 315. 2–*H. ox.* ii. 4. 16–*Anderson*.

Stem 2-edged, nearly 4-cornered. *Leafits* generally 10, and mostly alternate. *Fruit-stalks* of a hair-like fineness, with 1 or 2 flowers. *Flowers* small, violet, often blood-coloured. *Legum.* oval-oblong, smooth. Linn. *Stem* weak, much branched. *Leafits* about 5 pair, strap-spear-shaped, or strap-shaped, generally somewhat alternate. *Tendril* frequently simple. *Fruit-stalks* from the bosom of the leaves, as long as, or longer than the leaves, solitary, or in pairs. *Legum.* perfectly smooth. Mr. Woodward.

Smooth podded, or *Strangle Tare*. *Tine Tare*. Cornfields, hedges, and borders of ploughed fields. A. June.

Var. 2. Seeds 5, 6, or 7, rarely 4. Stem lower, extremely branched. These differences could not proceed from luxuriance of soil, as the spot where it grew was a remarkably dry gravel. Near Cambridge. Mr. WOODWARD.

hirsu'tum. E. Fruit-stalks many-flowered: seeds 2, globular.

Dicks. h. s.–Curt.–Dod. 542. 3–*Lob. obs.* 522. 2, *and ic.* ii. 76. 1–*Ger. em.* 1228–*Park.* 1069–*Riv. tetr.* 53, *Cracca minor.*–*J. B.* ii. 315. 1–*Fl. dan.* 639.

Stems weak, much branched, angular, scored. *Leaf-scales*, the lower with 2 or 3 awl-shaped teeth, the upper awl-shaped, entire. *Leafits* mostly strap-shaped, 8 to 12 pair, somewhat alternate, terminated by a branched tendril. *Fruit-stalks* axillary, shorter but not so slender as in the *E. tetraspermum*. *Flowers* 2, 3, or 4, on very short pedicles; when 2, separate; if 3, 2 of them together; if 4 in pairs. *Legum.* hairy. WOODWARD. *Plant* smooth, except the legumens. *Flowers* 2 to 7, pale purple, or white. Both in this and the preceding species the *summit* is bearded underneath.

Wild Tare. Tine Tare. Rough-podded Tare. Sandy cornfields and meadows.*

ORNI'THOPUS. *Seed-vess.* cylindrical, but jointed and crooked.

perpusil'lus. O. Leaves winged: legumens bowed in, much larger than the winged flower-scale.

E. bot. 369–*Kniph.* 7–*Dod.* 544–*Lob. obs.* 527. 2, *and ic.* ii. 81. 2–*Ger. em.* 1241. 3–*Park.* 1092. 1–*H. ox.* ii. 10. 13–*Lob. adv.* 403. 1, *and ic.* ii. 94. 1–*Ger. em.* 1241. 4–*Park.* 1092. 1, *of chap.* 23.

Root slender, nearly as long as the stems; lateral fibres few. *Stems* trailing, from 1 to 6 inches high. *Root-leaves* numerous, prostrate, the lowermost sometimes on leaf-stalks, the rest sitting; *leafits* egg-shaped, or elliptical, opposite, or alternate, from 3 to 14 pairs, with an odd one smaller. *Flowers* 1 to 5, terminating, opposite a leaf. *Bloss. standard* reddish white, with red lines. *Legumen* slightly compressed, and bowed inwards. SM. *Leafits* set with very fine silvery hairs. *Flowers* 2 and 3 together, generally terminating. *Bloss. standard* very slightly notched at the end, marked with crimson lines, the claw yellowish brown; *wings* white, with a reddish tinge; *keel* pale

* Horses, cows, goats, and sheep eat it. LINN. In wet seasons whole fields of corn have been overpowered and wholly destroyed by it.

straw-colour. Seeds 6. A beautiful plant, and not uncommon on dry heaths and downs; varying from 1 inch to a foot in the extent of its branches.

Common Birds-foot. Sandy banks, road sides, heaths and pastures. [Near Lichfield. Mr. WHATELY. Winson Green near Birmingham. Sr. Brandon Hill near Bristol. Mr. SWAYNE. Near Knaresborough, Yorkshire. Mr. ROBSON. Washwood Heath near Birmingham.] A. May—Sept.

Var. 2. Flowers entirely yellow.

Each leafit with a dark purple blotch. Sidmouth. May.

HIPPOCRE'PIS. *Seed-vessel* many-celled, compressed, crooked, with several notches along one of the seams.

H. Legumens on fruit-stalks, crowded, bowed, serpentine. como'sa.

Jacq. austr. 431–*Riv. tetr.* 97. 2, *Ferrum equinum comosum*–*E. bot.* 31–*Col. ecphr.* 301. 1–*Dicks. h. s.*–*Park.* 1092. 4–*H. ox.* ii. 10. 3–*Ger.* 1056. 2–*J. B.* ii. 348. 1.

Stems several, ascending, a span high, smooth. *Stipulæ* as it were running down. *Leafits* 15, oval-strap-shaped, expanding, of a firmish texture. *Fruit-stalks* between angular and scored, longer than the leaves, from the bosom of the upper leaves, 2 or 3. *Umbel* orbicular, with 8 flowers. *Bloss. standard* somewhat arched, scored underneath, not bent back at the edges except at the base, which is dented, whence there appears, as it were a pore on each side. LINN. *Root* thick, woody. *Stems* much branched, trailing, 2 to 9 inches long. *Stipulæ* in pairs, oval, blunt. *Leafits* seldom more than 6 pair, opposite, heart-shaped, or elliptical and dented. *Flowers* 6 to 10, disposed in a circle round the summit of the fruit-stalk, after flowering bent down. *Pedicles* slightly hairy, very short. WOODWARD. *Plant* sometimes quite free from hairs. *Bloss.* dull yellow, with brownish streaks.

Tufted Horse-shoe Vetch. Meadows and pastures in a calcareous soil. Chalky grounds about Gogmagog Hills; and between Northfleet and Gravesend; Kent, Surry, and Bedfordshire. Limestone rocks about Malham, Settle, Giggleswick, Kilnsay, and Wharf, Yorkshire. South side of Bredon Hill, Worcestershire, below the camp. NASH. [Swaffham, Norfolk; Bungay, Suffolk. Mr. WOODWARD. On the edge of the precipice all along Shellwith Hill. Mr. JACKSON. On Wick Clifts in great plenty, and on St. Vincent's Rocks. Mr. SWAYNE. On the high grounds north of Marlborough.] P. May—July.

HEDYS'ARUM. *Keel* broad and blunt on the outer part: *legumen* jointed, 1 seed in each joint.

Onob'rychis. H. Leaves winged: legumens with 1 seed, prickly: wings as long as the calyx: stem growing long.

Disks. h. s.–Kniph. 8–*Jacq. austr.* 352–*E. bot.* 96–*Riv. tetr.* 2. *Onobrychis–J. B.* ii. 335. 2–*Ger.* 1062. 1–*Clus.* ii. 232. 2–*Dod.* 548. 2–*Lob. obs.* 527. 1, *and ic.* ii. 81. 1–*Ger. em.* 1243. 1–*Park.* 1082. 1.

Stems cylindrical, scored; at first trailing, but when in flower ascending. *Stipulæ* in pairs, oval-spear-shaped, terminated by a long point, membranaceous at the edges, sometimes fringed with a few hairs. *Leaf-stalks* furrowed above, slightly hairy. *Leafits* 8 to 10 pair, with an odd one, those of the lower leaves elliptical, of the upper spear-shaped, or strap-spear-shaped, all with projecting points at the end, the uppermost with the mid-rib beneath and edges fringed. *Fruit-stalks* long, slightly hairy. *Bunches* long, closely tiled upwards. *Flowers* numerous. *Floral-leaves* awl-shaped, longer than the pedicles. *Calyx* 1-4th the length of the blossom. Woodward. *Calyx*, segments spear-shaped, hairy, the 2 upper distant, the lowermost the shortest. *Bloss. standard* egg-shaped, with a little tooth in the notch at the end, red in the middle, with 8 or 10 deeper coloured lines, white at the edges, and mottled with red, the lines on the outside fainter, but more numerous; *wings* very small, not half the length of the calyx, spear-shaped, red and white; *keel* reddish, with deeper coloured lines. *Legumen* oblong, hairy.

Common Saintfoin. Cock's-head. Meadows and pastures, particularly in chalky soils. [Burnham, Norfolk. Mr. Crowe. Gogmagog Hills near Cambridge. Woodward. Wick Clifts. Mr. Swayne. Wilts and the higher grounds of Gloucestershire, frequent, both wild and cultivated.] P. June, July.*

ASTRAG'ALUS. *Caps.* generally 2-celled; bulging: the solitary filaments cylindrical.

(1) *Stems trailing, leafy.*

hypoglot'tis. A. Stem prostrate: flowers in roundish heads: legumens egg-shaped, compressed, hairy, grooved, the point reflected. *E. bot.*

Dicks. h. s.–E. bot. 274–*Ray* 12. 3–*Fl. dan.* 614.

Flowers 8 or 10, forming a roundish head like clover. *Legumen* egg-shaped, grooved, with a double point which is bent back when ripe, covered with long, white, soft hairs. Linn.

† This is cultivated like Clover for feeding cattle, and is particularly advantageous in dry hilly situations, and chalky soils.

Stems weak, as many as 6 or upwards, towards the base lying close to the ground, the heads of flowers rise up at some distance from the root, as if without any leaves or stems belonging to them. *Leafits* 6 to 12 pair, with an odd one, elliptical, or spear-shaped, hairy, especially on the upper side, opposite. *Leaf-stalks* hairy, furrowed. *Stipulæ* egg-spear-shaped, sitting, in pairs, fringed. *Fruit-stalks* mostly from near the ends of the branches, ascending, larger than the leaf-stalks, about as long as the leaves, hairy, hairs white towards the base, black above. *Flowers* 5 or 6, rarely more, in a close head, on short pedicles. *Floral-leaves* oval-spear-shaped, 1 to each pedicle. *Calyx* beset with black hairs; teeth short, nearly equal. *Bloss.* bluish purple, sometimes white. Mr. WOODWARD. M. AFZELIUS first satisfied me that what had been taken for the A. *arenarius* by Hudson, Lightfoot, and Relhan, was the A. *hypoglottis* of Linn. Mantiss. which information is since fully confirmed by specimens which I have received from Professor Thunberg.

Purple Mountain Milkwort, or Cock's-head. A. danicus. Fl. dan. Retzius, and Bot. Arr. *ed.* ii. Sandy and chalky meadows and pastures. Gogmagog Hills, Newmarket and Royston Heaths. About Haslewood, Yorkshire; Pigburn Fields near Doncaster. Hills in the King's Park, Edinburgh; sands of Musselburgh; Hill of Moncrief near Perth; and York Cascade, at the Duke of Athol's seat at Blair. [Side of Bredon Hill, Worcestershire, near the camp. NASH. About Thorp-Arch, Yorkshire. Mr. WOOD. Swaffham Heath, Norfolk. Hills near Dunstable. WOODWARD. Coast of Angus-shire, plentifully. Mr. BROWN.] P. June, July.

A. Stems prostrate: legumens nearly 3-cornered, bent like a bow: leaves longer than the fruit-stalks; leafits oval. glycyphyllos.

Dicks. h. s.–*E. bot.* 203–*Fl. dan.* 1108–*Riv. tetr.* 103, *Astragalus*–*Kniph.* 3–*Trag.* 599–*J. B.* ii. 330–*Clus.* ii. 233. 1–*Lob. obs.* 526. 1, *and ic.* ii. 80. 1–*Ger. em.* 1233. 2–*H. ox.* ii. 9. 8.

Stems much branched, smooth. *Leaves* alternate; *leafits* usually 5 pair, with an odd one, mostly opposite, sitting, or on very short fruit-stalks, smooth, very entire. *Leaf-stalks* furrowed above. *Fruit-stalks* from the bosom of the leaves. *Flowers* greenish yellow, numerous, in a close bunch, on short pedicles. *Stipulæ* awl-shaped, 1 at the base of each pedicle WOODWARD. *Leaves* longer than the fruit-stalks; *leafits* rather pointed, slightly hairy underneath. *Floral-leaves* very slender, as long as the calyx. *Pollen* orange-coloured.

Wild Liquorice. Liquorice Cock's-head, or Fetch. Meadows, pastures, and ditch banks, especially in a calcareous soil. About

Charleton, Kent. [In the ditch of Northampton Castle. Mr. Wood. Near Diss, Norfolk, and Huntingdon and Coddenham, Suffolk. Woodw. Baydales, Darlington. Mr. Robson.] P. June, July.

(2) *Stalk bare, without a leafy stem.*

uralen'sis. A. Stalk upright, longer than the leaves: legumens awl-shaped, inflated, woolly, upright.

Jacq. ic. i.–*E. bot.* 466–*Lightf.* 17. *at p.* 401–*Hall. it. helv.* 2. 1. *in opusc. at p.* 308. *and stirp.* 5. 3. *at p.* 155. *and hist.* 14. 3. *at* 1. *p.* 195–*Fl. dan.* 1041, *has yellow and purple flowers.*

Leaves winged; *leafits* 23 to 33, egg-shaped, pointed, sitting, sprinkled with small whitish hairs. *Leaf-stalks* with 3 imperfect angles. *Stalks* twice as long as the leaves, cylindrical, hollow, somewhat scored, roughish. *Spike* short, rather oblong. *Flowers* sitting. *Floral-leaves* spear-shaped, shorter than the calyx. *Calyx* egg-shaped, inflated; teeth short. *Bloss.* purple, or violet blue. *Legum.* longer than the calyx; somewhat hairy. Linn. Whole *plant*, the blossoms excepted, covered with white soft hairs. *Leaf-stalk* surrounded at the base with spear-shaped withered scales. *Leafits* oval, oval-spear-shaped, and spear-shaped, with an odd one. *Fruit-stalks* much thicker than the leaf-stalks, but little longer than the leaves. *Flowers* 8 or 10, crowded. *Floral-leaves*, the lowest longer, the rest shorter than the calyx. Mr. Woodward. It is evident that specific character and additional description given by Linnæus to his Astr. Uralensis, do not apply well to Mr. Lightfoot's plant, in which the stalks are but little longer than the leaves, and the leafits rarely exceed 20 in number. But it is equally clear that the figure of Haller, which Linnæus refers to, belongs to Lightfoot's highland plant, so that whatever mistake exists about it, our botanists are not responsible; and indeed the greater number of errors into which they have fallen, seem to have originated with Linnæus himself. Whether our plant was at all known to him, can only be determined by his own herbarium.

Hairy Cock's-head. Mountainous aad alpine pastures in Scotland. Cromarty, and at the bay of Farr. Mr. Robertson. On Carn-dearg, one of the lower heads of Ben Squivlert id Glencream in upper Lorn, in a light sandy soil. Mr. Stuart. [On the top of North Queen's Ferry-hill, Fifeshire, but not so large as on Ben Lawers, where it was first observed by Mr. Don. Mr. Brown.] P. July.

TRIFO'LIUM. *Flowers* mostly forming a head: *capsule* or *legumen* scarcely longer than the calyx; not opening, but falling off entire.*

(1) MELILOTS. *Capsules naked, 1-celled, containing several seeds.*

T. Capsules 8-seeded, mostly 3 together, twice as long as the calyx: stems declining. Melilo'tus ornithopodioi'des.

Curt. 124–*Fl. dan.* 368–*Ray* 14. 1. *at p.* 332–*Pluk.* 68. 1.

Bunches egg-shaped. An intermediate plant between *Trifolium* and *Trigonella*. LINN. *Stems* prostrate, 2 to 5 inches long, disposed in a circular manner round the root. *Leafits* 3, sitting, mostly inversely heart-shaped, sharply and distantly serrated. *Leaf-stalks* long, slender. *Stipulæ* spear-shaped, sharply pointed, large, in pairs at the base of the leaf-stalks. *Fruit-stalks* axillary, much shorter than the leaf-stalks. *Flowers* from 1 to 4, but usually 2 on a fruit-stalk, parallel to each other. *Calyx* more than half the length of the blossom, pale green, with deeper lines; cloven half way down; segments nearly equal, awl-shaped. *Bloss.* pale red. *Legumens* short, thick, terminated by a short point turned downwards, which gives them something of the appearance of a bird's claw. WOODWARD.

Bird's-foot Trefoil. Fine short dry sandy pastures and meadows, and amongst corn. Half a mile from Tadcaster towards Sherborn. Near Oxford. Tottlesbury, Essex, on sandy banks by the sea side. Tothil Fields, Westminster. Black-heath, near London. About Marazion and Penzance, Cornwall. Maitland Bridge, between Musselburgh and Edinburgh. [Moushold Heath, near Norwich. Mr. PITCHFORD.]

A. June, July.

T. Capsules in bunches, often 2-seeded, wrinkled, acute: stem upright. Melilo'tus officina'lis.

Kniph. 7–*Fl. dan.* 934–*Gmel.* iv. 7–*Sheldr.* 72, *Common Melilot–Ludw.* 113–*Dod.* 567. 2–*Lob. obs.* 501. 2, *and ic.* ii. 48. 2–*Ger. em.* 1205. 4–*Park.* 719. 1. 2–*Ger.* 1034. 3–*Riv. tetr.* 6, *Melilotus–Blackw.* 80–*Matth.* 1162–*Trag.* 591–*H. ox.* ii. 16, *row* 2. 2–*Fuchs.* 749–*J. B.* ii. 370–*Ger.* 1034. 4–*Lonic.* i. 106. 1.

Leafits of the lower-leaves oblong-wedge-shaped, those of the upper elliptical, sharply serrated toothed. *Stipulæ*, the lower with 3 or 4 awl-shaded teeth; the upper spear-shaped, entire. *Bunches* long. *Flowers* bent back, scattered. *Pedicles* short, hairy. *Floral-leaves* awl-shaped, small, 1 at the base of each pedicle. *Cal.* 1-3d the length of the blossom, clefts extending

* The flowers of all the species, dried and powdered, may be made into bread, which in times of scarcity, has preserved the inhabitants of Scotland from perishing. The leaves of all the species fold up before rain. The *Papilio Cinxia*, and the *Phalæna Fascelina*, live upon the different species.

half way down, segments nearly equal. Woodward. *Bloss.* yellow.

Melilot Trefoil. Common Melilot. King's Claver. Hart's Clover. Cornfields, meadows, and ditch banks, in stiff soil. [Very common in Gloucestershire.] A. Linn. Relh. B. Huds. June, July.*

(2) *Legumens covered; many-seeded.*

re'pens. T. Heads like umbels: legumens 4-seeded: stem creeping.

Curt. 193–*Fl. dan.* 990–*Michel.* 25. 3 *and* 4–*Riv. tetr.* 17, 2, *Trifolium repens*–*Vaill.* 22. 1–*Dod.* 565–*Lob. obs.* 493. 2, *and ic.* ii. 29. 1–*Ger. em.* 1185. 1–*Park.* 1110. 1–*J. B.* ii. 380. 3–*H. ox.* ii. 12. *row* 1. 2.

Stem undivided, cylindrical, a span long. *Stipulæ* circular, blunt, but with a sharp point. *Leafits* circular, very blunt. *Fruit-stalks* very long. *Receptacle* strap-shaped, solid. *Chaff* egg-shaped, oblong, blunt. *Bloss.* parallel. In the above respects it differs from the T. *hybridum.* Linn. *Stipulæ* in pairs, oval-spear-shaped, lengthened out into an awn. *Leafits* varying in shape, but generally oval and blunt, sharply serrated, with a strong mid-rib, and numerous branching ribs terminating in the serratures. *Leaf-stalks* and *fruit-stalks* long, upright, rising nearly at right angles from the stem. *Flowers* in a close head, upright, when shrivelling bent downwards. *Pedicles* short. *Stipulæ* small, awl-shaped, 1 to each pedicle. *Cal.* teeth nearly equal, the 2 upper rather longest, reddish. *Bloss.* white; *standard* oval. Woodw. *Leafits* inversely-heart-shaped, and egg-shaped. *Calyx* greenish white, with purple streaks. When the flowering is partly over, the heads assume a peculiar appearance, the florets diverging from the centre, spreading outwards and downwards like an umbrella.

White Trefoil. Dutch clover. Meadows and pastures. P. May—Sept.†

Var. 2. *Bloodwort.* Leaves of a deep purple. Sr.

* This is more fragrant when dry than when green. A water distilled from the flowers possesses but little odour in itself, but improves the flavour of other substances. Horses are extremely fond of it; cows, goats, sheep, and swine eat it.

† Horses, cows, and goats eat it. Sheep are not fond of it. Swine refuse it. The leaves stand upright against rain. Linn.—Wherever this plant abounds spontaneously, it is always considered as an indication of the goodness of the soil; and this is well known to farmers. The richness of meadows and pastures is naturally owing to their abounding principally with the Trefoils, and others of the same class, with a due mixture of the more acceptable grasses. Pulteney's View.

Var. 3. *proliferous.* Small heads of leaves growing out of the flowers. Sr.

Canal between Limehouse and Bromley. Curt.—[Worcestershire. Sr.]

T. Heads like umbels: legumens 4-seeded: stem ascend- hy'bridum.
ing.

Mich. 25. 6 *and* 2–*Vaill.* 22. 5–*Riv.* 11. 2; *Trifolium fl. albo.*

Stem ascending, branched, furrowed; about a foot high. *Stipulæ* spear-shaped, sharp, terminating in a hair. *Leafits* egg-shaped, sharp, between serrated and toothed. *Fruit-stalks* not very long, but jointed. *Receptacle* egg-shaped, concave. *Chaff* spear-shaped, narrow, very sharp. *Bloss* gaping. It is very probable that this plant was at first produced by the pollen of T. pratense, fertilising the germen of T. repens. Linn.

Trifolium repens hybridum. Huds. On whose authority it stands as an English plant, but its existence as such wants further confirmation. Mr. Hudson mentions it as growing in moist pastures near Peckham and Battersea. P. May—Sept.

(3) *Calyxes woolly.*

T. Heads woolly; 5-flowered; a rigid tuft from the centre subterra'-
reflected upon, and inclosing the fruit. neum.

Curt. 128–*Riv. tetr.* 17. 2, *Trifolium subterraneum–Ray* 13. 2–*Barr.* 881–*H. ox.* ii. 14. *row* 1. 5.

The white filaments, which put forth from the extremities of the fruit-stalks, resemble roots, but they do not penetrate the earth, as supposed by Dillenius, but rise upwards, their ends expanding into little star-like points, and finally inclose the seed-vessels in a kind of prickly head. Curt. *Stems* numerous, prostrate, disposed in a circle round the root. *Stipulæ* in pairs, oval-spear-shaped. *Leaf-stalks* long, downy. *Leafits* sitting, inversely-heart-shaped, blunt, obscurely serrated, downy, especially underneath. *Fruit-stalks* from the bosom of the leaves, the lower shorter, the upper as long as the leaves, with 3 or 4 flowers. *Floral-leaves* none. *Calyx* cylindrical, cloven half way down; segments nearly equal, bristle-shaped, fringed with soft hairs. *Bloss.* white; standard oval, claw long and narrow. Mr. Woodw. Tube of the bloss. very long. There is something so singular in this plant, that its œconomy well merits a further enquiry. The strong horny stellated substance which grows from the extremity of the fruit-stalk, stretching its rays outwards and downwards, incloses and presses down the capsules to the ground.

Subterraneous Trefoil. Barren heaths and pastures in sandy or gravelly soil. About London, frequent. Gamlingay by the

wind-mills, and near Whitewood, Cambridgeshire. Between Eltham and Deptford, Kent. [Bath Hills, near Bungay, Suffolk. Mr. WOODWARD.—Mangotsfield Common, near Bath. Mr. SWAYNE. Salt marsh at Lymington, betwixt the town and the salt pans.] A. May—Aug.

glomera'tum. T. Heads sitting, hemispherical, rigid: calyxes scored; teeth expanded, equal.

Curt. 227–*Barr.* 882–*Pluk.* 113. 5.

Stem drooping. *Calyx* with 10 scores, naked, disposed in a beautiful manner, the stiff expanding segments filling up the interstices between the rest. LINN. *Stems* numerous, prostrate, 4 to 7 inches long, scarce perceptibly downy. *Stipulæ* in pairs, oval-spear-shaped, taper-pointed, scored, smooth. *Leaf-stalks* furrowed above. *Leaves* alternate; *leafits* nearly sitting, obtusely oval, or oblong-wedge-shaped, smooth on both sides, strongly ribbed, the ribs terminating in pointed serratures scarcely distinguishable by the naked eye, in the youngest leaves only the mid-rib lengthened into a projecting point. *Heads* from the bosom of the leaves and terminating, with a pair of stipulæ similar to, but broader than those beneath. *Cal.* smooth, shorter than the blossom; teeth expanding, triangular, pointed but not rigid at the end. *Bloss.* pale red; *standard* spear-shaped, somewhat keeled; *wings* and *keel* equal. Mr. WOODWARD.

Round-headed Trefoil. Sandy meadows, pastures, and moist heaths. Saxmundham, Suffolk. Blackheath and Greenhithe, Kent. Isle of Sheppey. About Norwich. [Bath Hills, near Bungay, Suffolk. Mr. WOODWARD. Near Yarmouth. Mr. TURNER.] A. May, June.

sca'brum. T. Heads sitting, lateral, egg-shaped: segments of the calyx unequal, stiff, bowed back.

Curt.–*Barr.* 870–*Vaill.* 33. 1–*J. B.* ii. 378. 4–*H. ox.* ii. 13. 10.

Stems not much branched. *Leafits* oval, thickish, somewhat scolloped at the edge. *Heads* from the bosoms of the leaves, hard, stiff, permanent. *Calyx* the outer teeth longer and stronger. *Bloss.* whitish, slender, as long as the calyx. LINN. Whole *plant* woolly. *Stems* prostrate, 4 to 7 inches long. *Stipulæ* oval-spear-shaped, terminated by an awn, scored with red lines. *Leaf-stalks* short. *Leaves* few; *leafits* oblong-wedge-shaped, sitting. *Heads* somewhat oval. *Calyx* scored, hairy; teeth triangular, the lowermost long, expanding, sharp, and giving the plant its roughness to the touch. *Bloss.* but little longer than the calyx, whitish. WOODWARD. It is in its seeding state that the segments of the calyx are most remarkably reflected.

Hard-knotted Trefoil. Chalky and sandy pastures. Chalk hills near the Thames between Northfleet and Gravesend. Near Chatham, and in the Isle of Sheppey. Newmarket; Gamlingay, Cambridgeshire. [Bath Hills, near Bungay, Suffolk. Woodw. Caister Common, near Norwich. Mr. Crowe. Wick Clifts. Mr. Swayne.] A. May, June.

T. Heads sitting, mostly lateral, egg-shaped: calyxes scored, rounded. *stria'tum.*

Fl. dan. 1171–*Vaill.* 33. 2–*Ray* 13. 3.

Calyx with 10 scores, hairy all over on the outside. Linn. *Stems* from 6 to 18 inches high, mostly upright, sometimes declining, but never prostrate. *Leaf-scales* in pairs, oval, with a point, scored, very downy. *Leaves* alternate, distant, the lower on long, the upper on short leaf-stalks, the uppermost sitting or nearly so; *leafits* of the lower leaves oblong-wedge-shaped, of the upper spear-shaped, sitting, downy on both sides, ribs not strongly marked, serratures barely distinguishable with a glass. *Heads* oval, woolly, sometimes on short fruit-stalks, some terminating, but mostly in pairs. *Calyx* just shorter than the blossom, scores almost hid by long soft hairs: teeth nearly equal, straight, awl-shaped, not stiff. *Bloss.* pale red; *standard* spear-shaped; *wings* and *keel* equal. Mr. Woodward. The ribs upon the calyx, and its rounded nearly globular shape when ripe, readily distinguish this species.

Soft-knotted Trefoil. Dry meadows and pastures. [Bath hills, Bungay, Suffolk. Mr. Woodward. Wick Cliffs. Mr. Swayne.] A. June.

T. Spikes woolly, oval: teeth of the calyx bristle-shaped, woolly, equal. *arven'se.*

Dicks. h. s.–*Curt. Dod.* 577. 1–*Lob. obs.* 498. 4, *ic. and* ii. 39. 1–*Ger. em.* 1193. 3–*Park.* 1107. 6–*H. ox.* ii. 13. 8–*Fl. dan.* 724–*Riv. tetr.* 15. *Lagopus*–*Ger.* 1023. 2–*Barr.* 901 *and* 902–*Matth.* 983–*Fuchs.* 494–*Trag.* 595–*Lonic.* i. 106. 5–*Blackw.* 450.

Bloss. wings marked within with a blood-coloured spot. Linn. *Bloss.* pale red, shorter than the calyx. Whole *plant* woolly. *Stem* upright, cylindrical, firm, much branched. *Stipulæ* in pairs, spear-shaped, scored with red veins, and ending in an awn. *Leaf-stalks* very short. *Leafits* of the lower leaves elliptical, of the upper nearly strap-shaped, somewhat nicked at the end, the mid-rib lengthened into a short point. *Calyx* reddish, longer than the blossom, scored; teeth bristle-shaped, nearly equal, fringed with long hairs. Mr. Woodward. *Bloss.* pale red. *Spikes* sometimes long and cylindrical. Calyx teeth a fine red; the hairs when much magnified appear rough and knotty.

Hares-foot. Hares-foot Trefoil. Sandy pastures and cornfields. [Wick Clifts. Mr. SWAYNE.] A. July, Aug.

Mr. Dickenson observes, that it is highly aromatic when dried, and that it retains its odour long.

Var. 2. *dwarf. Ray.* 14. 2.

Root running deep. *Stems* trailing, 1 to 3 inches long. *Fruit-stalks* very short. *Heads* numerous, roundish. *Blossoms* white or pale flesh-coloured. DILL. in R. Syn.—*Stems* trailing. *Leafits* rather elliptical, blunter than in 1, and by no means so pointed as in Dillenius's figure. *Stipulæ* more woolly than in 1. *Heads* nearly round, not so large as in the figure. Mr. WOODWARD.

Sea coast. Brackelsham, Sussex. [Yarmouth Denes, Lowestoft, plentifully. Mr. WOODWARD.]

me'dium. T. Spikes loose: blossom nearly regular: stipulæ awl-shaped, converging: stems zigzag, branched. AFZ.

Jacq. austr. 386–*E. bot.* 190–*Fl. dan.* 662.

Root cylindrical, slender, branching, tough, very long, brown, perennial, above with many heads, and somewhat shrubby. *Stems* several, simple, scored, cylindrical, or slightly compressed, ½ to 1 foot high, zigzag at almost all the joints, ascending, and but seldom truly upright. with a slight hairiness, and sometimes almost smooth. *Stipulæ* with a slight hairiness, especially at the edges, sometimes nearly smooth, spear-shaped, tapering both ways, approaching, scored, scarcely embracing the stem, with reddish lines below. *Leaf-stalks* cylindrical. *Leaves*, the 2 uppermost sitting; *leafits* spear-shaped, with minute serratures not visible to the naked eye, but perceptible to the finger passed downwards, often marked with indistinct white blotches, with a slight hairiness on both sides, and especially at the edge, sometimes nearly smooth; those of the lower leaves blunt and nicked at the end; those of the rest rather pointed. *Spike* roundish, pleasing to the eye and smell, nearly sitting, generally single, sometimes 2, slightly woolly. *Cal.* smooth, with 10 scores; teeth green, beset with scattered hairs, the lowermost equal in length to the tube of the blossom, the rest gradually shorter. JACQ. Differs from T. *pratense* as follows: *Leaves* longer, more strongly ribbed, smooth above *Stipulæ* spear-shaped, green, not awned. HALLER. *Leaves* longer and narrower, and *blossoms* of a deeper colour than those of the cultivated *Clover*. RAY.

Long-leaved, or *zigzag Trefoil. Trifol. alpestre.* Huds. ed. ii. Lightf. and Relhan. *Trifol. flexuosum.* Jacq. and Bot. arr. *ed.* ii. *Tr. medium.* fl. Suec. *Perennial Clover. Marle Grass.* HUDS.—Pastures and sides of hedges. RAY.—Sides of woods. JACQ.—Mountainous pastures. HUDS. At the foot of the Highland mountains in moist and shady places. LIGHTF. In Skir-

rith and other mountainous woods and pastures in the north, most plentifully. CURT. [High pastures, usually among bushes, and in woods and ditch banks. Bath Hills, near Bungay, Suffolk. Mr. WOODWARD. Grows commonly in hedges or in woods, seldom in the open ground. Plentifully in Shortwood near Pucklechurch, Gloucest. Mr. SWAYNE.] P. July.*

T. Spikes crowded: blossoms unequal: calyx with 4 of the teeth equal: stipulæ awned: stems ascending. AFZELIUS. — pratense.

Fuchs. 817–*Trag.* 586–*J. B.* ii. 374–*Ger.* 1017. 1–*Matth.* 835–*Riv. tetr.* 11. 1, *Trifolium*–*Blackw.* 20–*Kniph.* 1–*Lonic.* i. 104. 4.

Spike single, sitting between 2 opposite sitting leaves, the *stipulæ* of which are somewhat egg-shaped, dilated, membranaceous, skinny, with red veins, and form a kind of common calyx. *Cal. of the fruit* with 5 awns or bristles, the 4 uppermost very much expanding, but the 5th and lowermost upright. LINN. *Flowers* upright, when out of blossom hanging down. *Leafits* of the lower-leaves roundish, those of the upper oval, slightly downy, dark blackish green, with a whitish angular mark in the centre. *Stipulæ* the upper oval, terminated by an awn, scored with red veins slightly woolly. *Head* single, usually roundish and sitting, between a pair of nearly sitting leaves, and in part surrounded by their stipulæ, smaller, and of a deeper purple than those of Tr. medium. *Cal.* short, slightly woolly, generally scored with red veins; teeth bristle-shaped, woolly, usually tinged with purple. *Bloss.* of 1 petal; tube long; standard usually longer than the wings and keel, blunt, generally notched at the end; wings blunt. *Bloss.* reddish purple, sometimes white. Sr. *Stems* always bowed upwards at the base. *Branches* and leaves upright, not straddling. *Calyx* lower tooth far shorter than the tube of the blossom. AFZELIUS.

Purple Trefoil. Honeysuckle Trefoil. Cow Clover. Clover-grass. Meadows and pastures. B. May—Sept.†

Var. 2. *smaller.* Leaves inversely heart-shaped, the upper generally opposite. Spike bare. RAY.

Ray 13. 1.

* Cattle are not fond of it till it is touched by the frost. From the information of a farmer, to whom I pointed out the growing plant in flower. Sr. This is not *Marle Grass*. The true Marle Grass of the shops is the native T. *pratense*. Marle Grass was first cultivated by a farmer Smith, (I believe) of Somersetshire. (See Mr. Billingsley's Agricultural Report for Somerset.) A circumstance which particularly distinguishes the Trifolium *medium*, is its propagating itself by the root. Mr. SWAYNE.

† In a great scarcity of provisions bread has been made of the flowers. The heads are used in Sweden to dye woollen green. With alum they give a light, with copperas a dark green.

The English botanists have considered this as a smaller var. of T. pratense, the stipulæ being awned and the teeth of the calyx nearly equal, as in that species; but it differs in other respects very materially, the *leaves* being opposite, the *leafits* small, short, inversely heart-shaped, the fruit-stalk very long and destitute of floral-leaves. M. Afzelius in Linn. tr. i. 227.

Between Peckham and Camberwell. Huds.

Var. 3. *cultivated*. Larger and more upright than 1. Leaves somewhat paler and thinner. *Flowers* somewhat paler. Does not propagate itself by seed, or continue so long in the ground. Ray.

Fl. dan. 989.

Stems strong, almost smooth, furrowed, twice as tall as those of 1. *Heads* large, oval, hairy. *Petals* more expanding, and *styles* shorter than those of 1. Mill. Differs from 1 in nothing but size. Mr. Woodward. Sr. Mr. Swayne thinks it specifically different from the wild sort, whose heads are globular, but these are oval.

Broad Clover. Meadows and pastures.*

Var. 4. Flowers cream-colouted.

A specimen of this rare plant was sent to me by the Rev. Mr. Swayne, accompanied by the following observations. "A var. of Trifolium pratense with a yellowish white flower, found in a field belonging to Tracy Park, near Bath. I am confident it is a var. of Tr. pratense, as it exactly resembled that species in every thing but colour, and was the only plant of that colour in the whole field; indeed the only one I have ever seen."

On comparing the specimens sent by Mr. Swayne with the Tr. pratense, and Tr. ochroleucum, I am persuaded that his opinion is perfectly right. The structure in all respects corresponds with the former, wanting the general hairiness, the long awns to the stipulæ, and the very long tooth of the calyx so striking in the latter.

ochroleu'-cum. T. Spikes woolly: stem upright, pubescent: lower leafits inversely heart-shaped: lower tooth of the calyx as long as the tube of the blossom.

Dicks. h. s.–Curt.–Jacq. austr. 40.

Upper-leaves narrow, very entire. *Spikes* on fruit-stalks, oblong. *Calyx* the lowermost tooth the longest. *Bloss.* brimstone-coloured. Linn. *Stem* more hairy, and the *stipulæ* sheathing to a greater extent, and running out into longer awns than in the T. pratense. Gouan. *Leaves* alternate; *leafits* sitting, the lower

* Much cultivated. It is either grazed, or made into hay. Swine, goats, horses, and cows are fond of it. Linn.—Seldom remains in the ground more than 2 years. Mr. Woodward.

ones heart-shaped and egg-shaped in the same plant. Woodw. These circumstances, together with the great length of the lower tooth of the calyx, sufficiently distinguish it from the yellow-flowered var. of the Tr. pratense.

Ray's *Trifolium pratense hirsutum majus, flore albo-sulphureo,* (Syn. 328) belongs to this species as Mr. Hudson had determined, and not to the var. just mentioned.

Brimstone Trefoil. Dry meadows and pastures, and thickets, in a chalky soil in Essex, Cambridgeshire, Bedfordshire, Hertfordshire, Dupper's Hill, Croydon, and near Stamford. [Bath Hills, near Bungay, Suffolk. Mr. Woodward.] B. June, July.

T. Spikes hairy, globular: stipulæ spear-shaped, upright: calyx teeth spreading and dilated after flowering: leafits inversely egg-spear-shaped; upper leaves opposite. **marit'imum.**

Dicks. h. s.–E. bot. 220–*H. ox.* ii. 14, *upper left hand figure* –*Pluk.* 113. 4.

Calyx hairy on the outside, teeth equal. Linn. *Stem* woolly, with a few hairs. *Stipulæ* in pairs, spear-shaped, lengthened out, scored, fringed with long hairs. *Leaves*, the upper opposite; *leafits* of the lower-leaves oblong-wedge-shaped, of the upper oblong-wedge-spear-shaped. *Leaf-stalks* short. *Fruit-stalks* longer than the leaf-stalk. *Heads* oval. *Calyx* as long as the blossom, divided almost to the base; *segments* spear-awl-shaped, fringed with long hairs. *Bloss.* pale reddish purple; *standard* spear-shaped, keeled; *wings* hooked very near the base; *keel* as long as the wings. Mr. Woodward.

Teasel-headed Trefoil. Tr. stellatum. Huds. ed. ii. and Bot. arr. but not *Tr. stellatum* of Linn. Common on the Southern sea coast. Dartford Saltmarsh. Leigh and Little Holland, Essex. In Somersetshire. Tilbury Fort. Sheerness. Between Greenhithe and Northfleet. [In the meadows by the river side between the Hot-wells and Bristol. Mr. Swayne. Norfolk. Mr. Pitchford.] A. June, July.

(4) Bladder Trefoils. *Calyxes inflated and bellying.*

T. Heads roundish: calyx of the fruit reflected; upper lip 2-toothed, inflated: stems creeping. **fragi'ferum.**

Dicks. h. s.–Curt.–Fl. dan. 1042–*Vaill.* 22. 2–*J. B.* ii. 379. 3. *b.–H. ox.* ii. 13. 14–*Clus. cur.* 39–*Ger. em.* 1208–*Park.* 1109. 5.

Stems throwing out roots. *Fruit-stalks* longer than the leaves. *Calyx* a little downy, nearly globular, woolly, (the upper part) with 2 teeth, the lower at the base with 3 teeth. *Bloss.* white

with us, but in other countries reddish. LINN. *Bloss.* purple. CURT. *Stipulæ* in pairs, oval-spear-shaped, drawn out into a long point, smooth. *Leafits* heart or egg-shaped, smooth, very slightly serrated. *Fruit-stalks* naked, longer than the leaf-stalks. Mr. WOODWARD.

Strawberry Trefoil. Moist meadows. About London, frequent. [Moist places near the sea in the county of Durham. Mr. ROBSON.] P. Aug.

(5) HOP TREFOILS. *Standard of the bloss. bent inwards, permanent.*

procum'bens. T. Spikes oval, closely tiled, many-flowered: stems wide spreading.

Curt. 161; *T. agrarium–Vaill.* 22. 3–*Riv. tetr.* 10. 1, *T. lupulinum–Fl. dan.* 796–*Walc.–J. B.* ii. 381. 1–*H. ox.* ii. 13. 1. *and* 2, *the uppermost of the* 2 *figures.*

Differs from the *T. agrarium* in having smaller flowers, and its long stems entirely drooping. Similar to *T. filiforme*, but larger, and has often 10 to 12 flowers in a head. *Leaves* not scored. When sown too proves distinct. LINN. *Stems* much branched, slightly downy. *Stipulæ* in pairs, oval-spear-shaped, not ending in an awn. *Leaf-stalks* short. *Leaves* alternate; *leafits* egg-shaped, or obtusely oval, smooth, slightly serrated, the terminating one on a pedicle, 1 to 1½ line long, the side ones nearly sitting. *Fruit-stalks* numerous, from the bosom of the leaves, solitary, longer than the leaf-stalk. *Flowers* upright, yellow, after flowering turning brown, and bent back. *Pedicles* short. *Floral-leaves* minute, awl-shaped, 1 at the base of each pedicle. *Bloss. standard* egg-shaped, scored, flat. Mr. WOODW. *Leaves* with about 10 or 12 semi-transparent lateral ribs. The plant considered by the English Botanists as the Trifolium agrarium, is the Tr. procumbens of Linnæus, but all the synonyms given by Linnæus to the T. agrarium belong to the T. procumbens, except that of Dodonæus, which is the Medicago lupulina. The Trifolium procumbens of English authors is considered by Linnæus only as a variety of the Tr. filiforme. Mr. AFZELIUS.

Hop Trefoil. Dry meadows and pastures. A. June.

filifor'me. T. Spikes oval, loosely tiled, few-flowered: stems trailing.

Ray. 14. 4.

Differs from *T. procumbens* as follows: When wild scarcely a span high. *Branches* trailing. *Fruit-stalks* hardly thicker than horse-hair. *Flowers* 3 or 5 in a head, but when cultivated often 12 to 15, distinct, on more obvious pedicles. In the *T. procumbens* the fruit-stalks are as thick as a thread, not to mention the

difference of the leaves and habit. *Stems* thread-like. *Leafits* notched at the end, scored. *Fruit-stalks* longer than the leaves. *Flowers* bent down. *Pedicles of the fruit* clear and distinct. Linn. *Seed* 1. Leers. *Stems* 3 to 6 inches long. *Stipulæ* in pairs, oval-spear-shaped. *Leaf-stalks* very short. *Leafits* mostly heart wedge-shaped, very entire at the base, serrated upwards, strongly veined, smooth, nearly sitting. *Fruit-stalks* from the bosom of the leaves smooth. *Flowers* when wild mostly 3, seldom more than 5. *Pedicles* extremely slender, from ½ to 1 line long. *Floral-leaves* awl-shaped, very minute, 1 at the base of the pedicle of the middle flower, none on the others. *Calyx* half as long as the blossom, with 5 scores; the 2 upper teeth shortest, the lower longer, the lowermost the longest. *Bloss.* pale yellow; *standard* egg-shaped, somewhat nicked, keeled. Mr. Woodward.

Small Trefoil. Least Hop Trefoil. Poor sandy heaths and pastures. [Salt Marsh at Lymington.] A. May—July.

Var. 2. *Lesser Hop Trefoil.* Spikes from 8 to 20 flowered.

Curt. 307; *Tr. procumbens–Ray* 14. 3. *at p.* 332–*H. ox.* ii. 13. 1 *and* 2. *b, the lowermost of the 2 figures–Lob. obs.* 468. 1, *and ic.* ii. 29. 2–*Ger. em.* 1186. 6–*Park.* 1111. 5.

Stems numerous, 6 to 12 inches long, much branched. *Stipulæ* in pairs, obtusely oval-spear-shaped. *Leaf-stalks* short. *Leafits* heart-wedge or egg-shaped, very entire towards the base, serrated upwards, the odd one on a short leaf-stalk, the side one nearly sitting, smooth. *Fruit-stalks* from the bosom of the leaves, longer than the leaf-stalks, slightly downy. *Pedicles* very short. *Floral-leaves* none. *Flowers* after flowering bent back, hanging more loosely and separate than those of *T. procumbens.* *Calyx* larger in proportion to the blossom than that of *T. procumbens,* the 2 upper teeth short, the lower longer and more pointed. *Standard* egg-shaped, pointed. Mr. Woodward. *Stem* a little hairy. *Leafits* inversely heart-shaped, mid-rib a little hairy underneath, with about 7 semi-transparent lateral ribs. *Flowers* yellow; loosely tiled. This is the most common sort of Hop Trefoil, and may be found in almost every dry sandy or gravelly pasture, especially where the turf is fine, but varying greatly in size according to the richness or poverty of the soil, and flowering from May to August.

T. Without stem or stalk: flowers nearly sitting on the root. suffoca'tum.

Jacq. hort. 60.

Flowers in clusters, sitting, axillary, as it were buried in the earth. *Calyx* oblong, compressed, smooth, 5-cleft, segments bent back. *Bloss.* within the tube of the calyx, colourless. *Leaves* in threes, inversely egg-shaped, smooth, somewhat toothed. Linn. *Stipulæ* cloven, bristle-shaped. *Legum.* 2-seeded; not longer

than the calyx. Jacq. Every part of the plant, except the leaves, is buried in the sand. It has been overlooked on this account, nothing but leaves being visible, nobody thought of pulling them up for examination, but on putting down a knife or a stick the whole plant may be raised, and then its flowers and fruit come into view. The clusters in some of the older plants are as large as a small nut. Mr. Woodward. First found in England by Mr. Wigg, on the driest sandy part of Yarmouth Denis, near the sea. A. June—Sept.

LO'TUS. *Calyx* tubular: *wings* converging lengthwise and upwards: *legumens* straight, generally with cells.

cornicula'tus. L. Heads of the flowers flatted at the top: stems herbaceous, trailing: legumens cylindrical, expanding.

Fl. dan. 991–*Curt.* 107–*Kniph.* 7–*Ger.* 1022. 6–*J. B.* ii. 355–*Walc.*–*Dod.* 573. 2–*Lob. obs.* 501. 2, *and ic.* ii. 44. 1–*Ger. em.* 1190. 5–*H. ox.* ii. 18. 10–*Anderson, Astragalus glycyphyllus*–*Fuchs.* 527–*Trag.* 594–*Lonic.* i. 106. 3.

Bloss. sweet-scented. Linn. *Seeds* more than 20. Curt. *Calyx* in this and all the varieties fringed with long soft hairs. *Petals* all equal, on narrow separate claws. *Legum.* smooth, terminated by a long straight point. Woodward. *Heads* with a single sitting leaf at the base. Mr. Hollefear. *Flowers* in flatted heads, in a sort of umbel with very short spokes. *Bloss.* before opening of a bloody red on the outside, and of a yellowish green within, when expanded of a full yellow; *standard* bent back; *wings* oblong-egg-shaped.

Birds-foot Claver. Meadows, pastures, heaths, road sides. P. June. Aug.*

Var. 2. Linn. Larger: stem more upright.

Riv. tetr. 76. 1, *Lotus.*–*J. B.* ii. 356. 1.

Leaves, and especially the unexpanded *heads*, with a good deal of woolliness. Ray. *Stem* upright, 2 feet high, hardly angular. *Leaves* veined underneath. Lyons. *Stipulæ* bluntly egg-shaped, or roundish, but terminating in a point. Mr. Woodward.

* The flowers become greenish when dried: in which respect they resemble the flowers of the plants which produce Indigo. Cows, goats, and horses eat it. Sheep and swine are not fond of it. *Thrips Physapus* is found upon it. Linn. In Hertfordshire it is cultivated as pasturage for sheep. *Bot. arr. ed.* I.—It is strongly recommended by Mr. Anderson. Curt.—There is no doubt but it might be cultivated to great advantage. In moist meadows it grows to a great height, and much higher than any of the *Trefoils* or *Medicago lupulina*, and makes extremely good hay. Mr. Woodward.

Loti corniculatæ major species. R. Syn. 334. (St.) Woods, moist meadows and hedges, [and sides of wet ditches. St.]
P. June—Aug.

Var. 3. *tenuissimus.* Linn. Should seem to be a variety. *Stems* twice as long and narrow as those of 1. *Leaves* strap-shaped. *Legumen* narrower. Linn. More shrubby. Ray. *Stipulæ* strap-spear-shaped. Mr. Woodward.

Lotus foliis longioribus et angusioribus. Hall. 385 β II. (St.) Cornfields and moist places. Ray.—In the neighbourhood of Worcester. St.

Var. 4. Like 2. but less hairy. Ray. Whole plant downy. Mr. Woodward.

Lotus pentaphyllos medius pilosus. R. Syn. 334. (St.) In the fields behind Mother-huff's. Ray.

Var. 5. Leaves hoary underneath.
Chalk pits at Greenhithe. Ray.

Var. 6. *smooth.* Plant entirely hairless; stipulæ half-egg-shaped; filaments club-shaped.
High grounds North of Marlborough. June.

The common *trailing* sort, and the *upright* which grows in woods, ought, I think, to be specifically distinguished. The *Legumens* of the former grow gradually *larger*, those of the latter more *taper* towards the end. The seeds of the former (which are generally much devoured by the *larvæ* of some insect,) are considerably larger than those of the other. Mr. Swayne.

It is certainly to be wished that some person would cultivate these varieties in order to ascertain their differences more accurately. Var. 3 with strap-shaped leaves differs very much in its habit and in its flowering head from the large var. 2.

MEDICA'GO. *Pistil* bent, pressing down the keel and springing out of it with a jerk: *S. vess.* a legumen, compressed, bent, or twisted spirally.

M. Flowers in bunches: legumens narrow, regular, twisted: stem upright, smooth. — sati'va.

Kniph. 8–*Clus.* ii. 242. 2–*Lob. obs.* 498. 1, *and ic.* ii. 36. 2–*Ger. em.* 1189. 2–*Park.* 1114. 1–*H. ox.* ii. 16. *row* 1, 2–*and* ii. 15. *row* 3. II.–*J. B.* ii. 378. 1.

Stems scored, declining. *Branches* alternate. *Stipulæ* spear-shaped, ending in an awn. *Leaf stalks* short. *Leafits* 3 together, elliptical, entire at the base, serrated upwards, the mid-rib lengthened into a thorn-like point, slightly downy above, smooth, and scored with veins underneath, on leaf-talks, that of the ter-

minating one the longest. *Fruit-stalks* from the bosom of the leaves, longer than the leaves. *Bunches* thick. *Pedicles* short. *Floral-leaves* awl-shaped, 1 at the base of each pedicle. *Cal.* nearly smooth; teeth awl-shaped, nearly equal. *Bloss.* purple. *Legum.* twisted spirally with 2 or 3 distant turns. WOODWARD.

Lucern Medick. Meadows, pastures, and ditch banks.

P. June, July.*

falca'ta. M. Flowers in bunches: legumens crescent-shaped: stem prostrate.

Fl. dan. 233–*Kniph.* 11–*Riv. tetr.* 84, *Falcata*;–*H. ox.* ii. 16. *row* 1. 1, *and* ii. 15. *row* 3. 1–*Clus.* ii. 243. 1–*Ger. em.* 1191. 8–*Park.* 1114. 3–*J. B.* ii. 383. 2.

Stems cylindrical, smooth, slightly scored, declining. *Stipulæ* in pairs, spear-shaped, almost all at the base, and some almost at the top of the branches, with 1 or 2 teeth on the outer edge. *Leaf-stalks* short. *Leaves* smooth, 3 together; *leaflts* elliptical or wedge-shaped, entire at the base, serrated upwards, mostly notched at the end, the mid-rib lengthened out into a projecting thorn-like point. *Fruit-stalks* longer than the leaves. *Bunches* rather loose. *Floral-leaves* awl-shaped. *Cal.* slightly downy; teeth awl-shaped, equal. *Bloss.* yellow or purple. *Legum.* crescent-shaped, terminated by a long claw. *Seeds* 5 or 6, compressed, fixed to the inner suture. WOODWARD.

Yellow Medick. Butter-jags. Balks of cornfields, and sandy pastures. Between Watford and Bushy-Hill. RAY.—About Norwich, plentifully. Mr. ROSE [and Mr. WOODWARD.]

P. July.†

* Modern writers upon husbandry strongly recommend the cultivation of this plant, for the purpose of feeding cattle, but it is not yet generally adopted, though in the neighbourhood of London people seem to be aware of its merit. It requires a deep rich soil, and, in such, will continue to flourish many years, perhaps for ever, if kept free from weeds. One pound of Lucerne seed contains about 150,000 seeds, so that, supposing only one seed in three to vegetate and to survive accidents, one pound would produce 50,000 plants. Millar adduces various interesting facts relative to its utility, and we have ascertained that half an acre of Lucerne, the rows eighteen inches asunder, and the plants nine inches apart, will support a pair of chaise-horses, (cut and brought to them in the stable,) without any corn or hay, in good working condition, for twenty weeks, that is from June to October inclusive, and they prefer it to any other kind of food. It should be given cautiously at first, as it then proves a powerful diuretic: and too great abundance will in some horses occasion the staggers. Pigs devour it greedily, and cows fatten on it.

† In hot, dry, barren sandy places it is well worth the trouble of sowing for the purpose of making hay. A practice long since adopted in some parts of Sweden. Cows, horses, goats, and sheep eat it.

M. Spikes oval: S. vessels kidney-shaped, with 1 cell and 1 seed: stems trailing. lupuli'na.

Fl. dan. 992–*Curt.* 120–*Kniph.* 11–*Riv. tetr,* 8, *Melilotus minima*–*H. ox.* ii. 15. *row* 4. *f.*–*Fuchs.* 819–*Trag.* 593–*J. B.* ii. 380. 4–*Dod.* 576. 2–*Ger. em.* 1186. 5–*Park.* 1105. 6–*H. ox.* ii. 16. 8–*Ger.* 1020. 2–*Lonic.* i. 106. 4.

Legumens scored, wrinkled, somewhat rough with stiff hairs. LINN. *Stems,* unless supported by other plants, trailing. *Branches* very numerous, alternate. *Stipulæ* oval-spear-shaped, with a long awn. *Leaves* on very short leaf-stalks; *leafits* 3 together, oblong-wedge-shaped, serrated upwards, nicked at the end, with the mid-rib lengthened into a projecting point. *Head* oval. *Flowers* small. *Calyx* slightly downy, nearly as long as the blossom; teeth awl-shaped, the 2 upper ones rather shorter. *Bloss.* yellow. *Legumen* turning black when ripe. WOODWARD. *Stem* a little triangular. *Flowers* 30 to 40, and upwards.

Trefoil Medick. Melilot Trefoil. [*Black Nonsuch,* Norfolk. Mr. WOODWARD.] Cornfields, meadows and pastures.

A. May—Aug.*

Var. 2. *Legumens* about 10, slightly compressed, rough with numerous tubercles. RAY.

H. ox. ii. 15. 4.

Medica polycarpos fructu minore compresso scabro. R. Syn. 333.—*Medica cochleata, &c.* H. ox. ib.—The rest of the synonyms in the Fl. Angl. belong to 1. ST.

Cornfields near Peckham, Paddington, and behind Pindar's-end, near Enfield. RAY.

Var. 3. *Legumens* smooth; not set with stiff hairs.

This new variety was discovered, and communicated by Mr. ROBSON.

M. Fruit-stalks with 2 or 3 seed-vessels: legumens prickly: stipulæ toothed: leafits inversely heart-shaped: stems spreading. arab'ica.

Curt. 176–*Cam. hort.* 27–*Ger.* 1021. 4–*Ger. em.* 1190. 4–*Park.* 1115. 6–*H. ox.* ii. 15. *row* 2. 12.

Leafits with a spear-shaped blood-coloured spot, which after flowering disappears. *Flowers* four or five. *Fruit* with widely diverging thorns. *Legumens* flat at the base, narrowing to-

* Cows, horses, goats, and sheep it; but it is less grateful to them than the other species. LINN. It is cultivated in Norfolk under the name of *Nonsuch,* and is usually sown mixed with Rye-grass (*Lolium perenne.*) The crop is then called black and white Nonsuch. Mr. WOODW. In the Isle of Wight I have seen it sown along with clover and rye grass.

wards the top; wreathes flat; prickles expanding, hooked at the ends. LINN. *Stem* 4-cornered, with long whitish hairs below, smooth above. *Leaf-stalks* cylindrical, channeled, hairy in like manner. *Leafits* 3, somewhat ribbed, smooth, marked above with a blackish brown heart-shaped spot; edge partly entire, partly serrated. *Stipulæ* pointed, serrated. *Fruit-stalks* from the bosom of the leaves, hairy, with 5 flowers, but 2 or 3 of these generally abortive. *Bloss. standard* notched at the end, much larger than the other petals. WILLICH. *Blossoms* yellow.

M. polymorpha arabica. Linn. *Heart Trefoil. Heart Clover. Snailshell Medick.* Dry sandy pastures, borders of fields especially on the sea shore. [Wells, in Norfolk. Mr. CROWE.—Meadows near the Hotwells, Bristol. Mr. SWAYNE.—West of Bridport, plentiful.] A. May, June.

Var. 2. *hybrida.* Fruit-stalks mostly 2-flowered: lower legumens spirally wreathed, thorny, the upper somewhat bowed. HUDS.—Lower *legumens* with 3 turns, thorns diverging; seeds perfect. *Upper* ones strap-shaped, half an inch long, bowed or bent inwards, slightly protuberating; seeds imperfect. HUDS.

It does not appear exactly how far this plant of Mr. Hudson's differs from the preceding.

Near Charlton in Kent. A. May.

min'ima. M. Legumens mostly 3 on a fruit-stalk: prickles hooked: stipulæ entire.

H. ox. ii. 15. *row* 2. 15.–*J. B.* ii. 386. *b.*–*Riv. tetr.* 88, *Cochleata, row* 4. *f.* 4, *ech. min.*–*J. B.* ii. 386. 2. *a.*–*Park.* 1115. 7. *a*–*Fl. dan.* 211.

Legumens several, scarcely larger than the seeds of *Orobus*, the spirals rough with thorns, bowed back laterally. *Stipulæ* entire. LINN. *Root* frequently envelloped at the top with the old shell as represented in *J. B.* ii. 386. 2. *a*; striking deep, white, tough, of the size of small twine, with a few stiff fibres. Whole *plant*, except the blossoms, covered with a white silky down. *Stems* somewhat angular, numerous, trailing, often tinged with purple. *Stipulæ* spear-shaped, entire, ribbed. *Leaves* on leaf-stalks; *leafits* 3 together, the lateral ones sitting, the middle one on a leaf-stalk, oblong-wedge-shaped, very entire at the base, serrated upwards, with strong ribs terminating in serratures, notched at the end with an intermediate projecting point. *Fruit-stalks* as long as the leaves. *Flowers* from 1 to 6, in a loose head, on short unequal pedicles. *Cal.* teeth 5, awl-shaped, as long as the body of the cup. *Bloss.* small, pale yellow. *Legumens* with stiff hooked prickles. Mr. WOODWARD.

Sandy places, but rather rare. RAY.—[Narborough, near Swaffham, Norfolk, in a very light sand. A. Mr. WOODWARD.]

M. Fruit-stalks many-flowered: legumens roundish, murica'ta. thorny, hoary: leaves woolly.

Pluk. 113. 6–*H. ox.* ii. 15. 11.

Thorns on the fruit not rigid. PLUK.

At Orford in Suffolk on the sea bank, close by the sea, plentifully. RAY. A. May, June.

CLASS XVIII.

POLYADELPHIA.

POLYANDRIA.

HYPE'RICUM. *Cal.* with 5 divisions; beneath: *Bloss.* 5 petals: *Styles* 1, 3 or 5: *Capsules* 1, 3 to 5-celled.

POLYANDRIA.

HYPE'RICUM. *Cal.* with 5 divisions: *petals* 5: *filaments* numerous, united at the base into 3 or 5 seeds: *capsule* with 3 or 5 cells, and many seeds.

(1) *Styles* 3: *Stems shrub-like.*

H. Fruit like a berry: stem 2-edged. Androsæ'mum.

Curt. 265–*Dod.* 78. 2–*Lob. obs.* 357. 3, *and ic.* i. 632. 1–*Ger. em.* 543. 1–*Park.* 576. 1–*Blackw.* 94–*Ger.* 435–*H. ox.* v. 6. 12.

Leaves opposite, sitting, smooth, entire, egg-shaped; at the base of the branches very large, those of the branches decreasing in size as they approach the summit, and approaching to spear-shaped. *Cal.* segments unequal. *Berries* black when ripe. Mr. WOODWARD. Flowers terminating, 4 together. *Fruit-stalks* cylindrical, smooth. *Cal.* the outer segments much larger. *Petals* yellow, concave, scored, unequal at the end from a hollow in the margin on one side.

Tutsan. Park-leaves. Woods and moist hedges. [Woods at Wick Clifts. Mr. SWAYNE. Near Pengwarry, Cornwall, in

ditches. Mr. WATT. Duke of Bridgewater's woods at Askeridge, and near Berkhamsted, Hertfordshire. Mr. WOODWARD. Lanes at the foot of Malvern Hill, Worcestershire. ST. Rocky woods in Westmoreland, frequent. Mr. GOUGH. In a deep holloway in a marly soil, between Worcester and Tewksbury.]

P. July—Sept.

(2) *Styles* 3: *Stems herbaceous.*

quadran'gulum. H. Leaves egg-shaped, with pellucid dots: stem 4-cornered.

Curt. 231–*E. bot.* 370–*Fl. dan.* 640–*Trag.* 73. 2–*Matth.* 937–*Dod.* 78. 1–*Lob. obs.* 216, *and ic.* 399. 1–*Ger. em.* 542–*Park.* 575–*Ger.* 434–*H. ox.* v. 6. 10–*Pet.* 60. 11.

Stem reddish, smooth. *Branches* opposite. Lower *leaves* sitting, opposite; the upper growing together, egg-shaped, with 7 or 9 ribs, with a net-work of veins, with transparent glands in the interstices, though not very numerous; discernible when viewed with glass in a strong light. *Floral-leaves* awl-shaped, in pairs. Mr. WOODW. *Stem* branched; edges membranaceous, marked with short dark purple glandular streaks. *Leaves* in pairs, sitting, oblong-egg-shaped, ribbed, dotted along the edges with black glands, particularly on the under side. *Calyx*, segments ribbed, rather expanding, a little toothed at the end. *Petals* yellow, ribbed, concave, generally marked with dark purple lines and dots, filled with a purple liquor, which stains paper with a muddy purple permanent stain. *Anthers* with a small black gland. *Styles* yellow. *Summits* purple.

Quadrangular St. John's-wort. St. Peter's-wort. Moist hedges and shady places. [Bogs in Cornwall. Mr. WATT. Wick Clifts. Mr. SWAYNE. About Manchester. Mr. CALEY.

P. July.

perfora'tum. H. Stem 2-edged: leaves blunt; with pellucid dots.

Ludw. 11–*Curt.*–*E. bot.* 295–*Mill. ill.*–*Blackw.* 15–*Woodv. p.* 29–*Fl. dan.* 1043–*Kniph.* 3–*Dod.* 76. 1–*Lob. obs.* 216. 1, *and ic.* i. 398. 1–*Ger. em.* 539. 1–*Park.* 573. 1–*Pet.* 60. 5–*Matth.* 936–*Ger.* 432. 1–*Fuchs.* 831–*Trag.* 72. 1–*H. ox.* v. 6. 1.

Whole *plant* quite free from hairs. *Stems* upright, nearly cylindrical, the edges running from the base of the leaves to the bottom of the knot below, beset above with small black dots. *Leaves* in cross pairs, oblong, rounded at the end, with 7, and sometimes 5, semi-transparent lines, with several black dots near the edges on the under side; the semi-transparent dots numerous. *Fruit-stalks* from the bosom of the upper leaves. *Calyx*, seg-

ments spear-shaped, ending in a taper point. *Petals* ribbed set near the edges with dark purple glands, one of the sides very entire at the edge, the other serrated. *Stam.* 30 or more. *Anthers* with a globular black gland at the top between the lobes. *Germ.* egg-shaped. *Styles* thread-shaped, yellow. *Summits* sometimes crimson.

Common St. John's-wort. Thickets, woods, hedges, dry banks. [Wick Clifts. Mr. SWAYNE.] P. July.*

H. Stem imperfectly 4-edged: leaves blunt; without pellucid dots: calyx leaves elliptical. *E. bot.* — du'bium.

E. bot. 296.

Stems several, 2 to 3 feet high; upright, imperfectly 4-cornered; sprinkled with black dots. *Leaves* large, embracing the stem, egg-shaped, very thin and skin-like at the edge, with black dots underneath. *Calyx* leafits very blunt, yellow green, marked with short black lines. *Petals* large, very entire, yellow, with black lines above and a few black spots underneath the edge. LEERS. Mr. BOURNE observes that the petals in the plants growing about Worcester have no mark at all upon the upper surface, nor have they any dots at the margin, but some dusky purple streaks on the under surface. In other respects the plants agree with the description of Leers.

Imperforate St. John's Wort. Discovered first as an English plant by Dr. SEWARD of Worcester, growing plentifully about Sapey in that county. At Hafod, Cardiganshire, and in Mr. Knight's woods at Downton Castle, near Ludlow, by Dr. SMITH. See E. bot. In Mr. Digby's plantation at Meriden, Warwicksh. P. July, Aug.

H. Flowers axillary, solitary: stems 2-edged, prostrate, thread-shaped: leaves smooth. — humifu'sum.

Curt. 162–*Fl. dan.* 141–*Clus.* ii. 181. 3–*Dod.* 76. 2–*Lob. ic.* i. 400. 1–*Ger. em.* 541. 4–*Pet.* 60. 8–*Trag.* 72. 2–*J. B.* iii. 386. 1–*H. ox.* v. 6. 3.

* This plant has long held a place in the materia medica, but its use is very much undetermined. The semi-transparent dots on the leaves, are the receptacles of an essential oil. The leaves given in substance, are said to destroy worms. The flowers tinge spirits and oils of a fine purple colour, which is probably derived from the little glands upon the anthers, and upon the edges of the petals. Cows, goats, and sheep eat it. Horses and swine refuse it.—On the Eve of St. John the Baptist, the people of North Wales fix sprigs of this plant over their doors, and sometimes over their windows, in order to purify their houses, and by that means drive away all fiends, and evil spirits, in the same manner as the Druids were accustomed to do with Vervain. *Bingley's Tour.*

Stems numerous. *Leaves* opposite, sitting, egg-shaped, or bluntly oval, entire, with 7 veins, with semi-transparent dots not distinguishable but with a glass and a strong light. *Fruit-stalks* also terminating. *Floral-leaves* none. Mr. Woodw. *Stems* somewhat flatted. *Leaves* oblong, smooth, set with glands near the edges, scored with semi-transparent lines. *Flowers* sometimes in pairs. *Calyx* segments unequal, spear-shaped, terminated by a very small point, a little toothed at the edges, marked with dark purple spots and streaks. *Petals* yellow, with a tinge of red on the outside, set with a few blackish glands at the end. *Stam.* in 3 sets, 5 or 6 in each. *Anthers* without glands. *Summit* sometimes tinged with red.

Trailing St. John's Wort. Meadows, pastures, heaths, [and woods, as Ronck's Wood, near Worcester. St. Stuston Common, near Diss, Norfolk. Mr. Woodward. Malvern Common, Worcestershire. Mr. Ballard. Wick Clifts. Mr. Swayne. Manchester race ground. Mr. Caley.] P. July.

Var. 2. Leaves growing by threes.

elo'des. H. Stem cylindrical, creeping, woolly: leaves woolly, roundish.

Dicks. h. s.–E. bot. 109–*Pet.* 60. 12.

Stems trailing and creeping. *Flowering branches* ascending, 5 or 6 inches high. *Leaves* sitting, frequently slightly nicked at the end, with 3 ribs, and with dots not visible but with a glass, and held against a strong light. *Flowers* few in a panicle. *Panicle* branched, leafless *Floral-leaves* oval-spear-shaped, minute, reddish, edged with red glands, a pair beneath each division. *Calyx* reddish, about 1-4th as long as the blossom, deeply divided; segments oval, edged with minute red glands. *Bloss.* reddish yellow, usually closed, twisted spirally, sometimes merely folded up. Mr. Woodward. *Stem* 3 to 8 inches long. *Leaves* opposite. *Fruit-stalks* smooth, terminating. *Petals* yellow, with 8 greenish lines, and a small greenish gland on the inner side of the claw. *Filaments* in 3 sets, about 3 in one set, 4 in another, and in the third.

Marsh St. John's Wort. Marshy places, in a peaty spongy soil. [Bogs in Norfolk, not unfrequent. Boggy ground near Norwich. Mr. Woodward. Bog at Cosgarne, Cornwall. Mr. Watt. Bogs on Birmingham Heath.] P. July.

monta'num. H. Calyx serrated with glands: stem cylindrical, upright: leaves egg-shaped, smooth.

E. bot. 374.–*Fl. dan.* 173–*Col. ecphr.* 74. 1–*Trag.* 73. 3–*Pet.* 60. 7–*J. B.* iii. 383. 2–*H. ox.* v. 6. 9–*Fuchs.* 74.

Floral-leaves at the top of the stem, small, and fringed with

glandular hairs, which is not the case with *H. hirsutum*. LINN. *Stem* upright, cylindrical, smooth. *Leaves* in pairs, sitting, egg-shaped, the upper egg-spear-shaped, smooth, with 7 ribs, and a net-work of veins, the edges set with black dots. *Flowers* in panicles. *Panicles* branched, terminating, or from the bosom of the upper-leaves. *Floral-leaves*, *fruit-stalks*, and *calyxes* beset with strong hairs, each terminated by a black gland. *Calyx* divided almost to the base; segments spear-shaped, pointed. WOODWARD. *Upper-leaves* with numerous, minute, circular, transparent dots, visible to the naked eye, in the lowermost pairs only dotted towards the base. *Bloss.* yellow. SY.

Mountain St. John's Wort. Woods and thickets, in mountainous situations. Frequent in the West of England. Charlton Wood. Above Bwrdd Arthur, Anglesea. Mr. DAVIES. Syke's Wood, near Ingleton, Yorkshire. CURT. Hedge banks and sides of woods about Pershore and Bredon Hill, Worcestershire. NASH. [Bath Hills, near Bungay, Suffolk. Mr. WOODWARD. Near Cartmel Well. Mr JACKSON. Many barren places in Furness Fells. Mr. ATKINSON.] P. July.

H. Calyx serrated with glands: stem cylindrical, upright: leaves egg-shaped, somewhat downy. hirsu'tum.

Curt. 182–*Kniph.* 8–*Pet.* 60. 10–*H. ox.* v. 6. 11–*Fl. dan.* 802–*Fuchs.* 76–*J. B.* iii. 382. 2.

The *flowers* close in the night, which those of the *H. perforatum* do not. LINN. *Stem* upright, nearly cylindrical, with a brownish short wool. *Leaves* in cross pairs, those of the stem egg-shaped, broader than those of *H. perforatum*, rough with short hair, with 7 or 9 ribs, and numerous semi-transparent dots; those of the branches spear-shaped. *Floral-leaves* with glandular serratures at the edges. *Calyx* segments spear-shaped, with about 12 glands on each. *Petals* yellow, entire, with 6 or 8 ribs, and a few black glands at the end. *Stamens* about 24. *Germ.* egg-shaped. *Styles* thread-shaped, yellow. *Summits* crimson.

Hairy St. John's Wort. Thickets and hedges. [Wick Clifts. Mr. SWAYNE. At the foot of Ingleborough, near to Hurtlepot, and many other places in Craven, Yorkshire. Mr. CALEY.] P. June, July.

H. Calyx serrated with glands: stem cylindrical: leaves embracing the stem, heart-shaped, smooth. pul'chrum.

Curt.–*Fl. dan.* 75–*Walc.*–*Trag.* 74–*Pet.* 60. 6–*Lonic.* i. 130. 2–*J. B.* iii. 383. 1.

Stem upright, often red. *Leaves* in distant pairs, heart or obtusely egg-shaped, green above, sea-green beneath, with numerous semi-transparent dots. *Flowering branches* from the

bosom of the upper leaves, slender, with 1 or more flowers at the end, and · or 2 small leaves. *Floral-leaves* none. *Calyx* very short, deeply divided; segments oval, blunt; glands black. *Petals* set at the edge with black glands. WOODWARD. *Stem* smooth. *Leaves* in opposite pairs. *Calyx* and *petals*, edges set with dark-coloured glands. *Filaments* shining, yellow, in 3 sets, about · in each set. *Anthers* scarlet.

Upright St. John's Wort. Hedges, and heaths, in exposed sunny situations [Heaths near Norwich. Mr. CROWE. Heaths in Hertfordshire. Mr. WOODWARD. Wick Clifts. Mr. SWAYNE. On a sloping bank near the wall on the East side of Edgbaston Park. Miss WITHERING.] P. June, July.

CLASS XIX.

SYNGENESIA.

ÆQUALIS.

(1) *All the Florets strap-shaped.*

CICHO'RIUM. . . . . *Receptacle* somewhat chaffy: *Down* chaff-like: *Cal.* double.

HYPOCHÆ'RIS . . . *Receptacle* chaffy: *Down* somewhat feathered: *Cal.* tiled.

TRAGOPO'GON . . . *Receptacle* naked: *Down* feathered; on a pedicle: *Cal.* simple.

PI'CRIS. . . . . *Receptacle* naked: *Down* feathered; on a pedicle: *Cal.* double.

LEON'TODON. . . . . *Receptacle* naked: *Down* on a pedicle: *Cal.* tiled; scales flexible.

CRE'PIS. . . . . *Receptacle* naked: *Down* hair-like: *Cal.* double, with scales of different shapes.

PRENAN'THES. . . . *Receptacle* naked: *Down* hair-like: *Cal.* double; containing about 5 florets.

LACTU'CA. . . . . *Receptacle* naked: *Down* hair-like; on a pedicle: *Cal.* tiled; scales skinny at the edges.

HIERA'CIUM. . . . . *Receptacle* naked: *Down* hair-like; sitting: *Cal.* tiled; egg-shaped.

SON'CHUS. . . . . *Receptacle* naked: *Down* hair-like; sitting: *Cal.* tiled; bellying (at the base.)

LAP'SANA. . . . . *Receptacle* naked: *Down* none: *Cal.* double.

HYO'SERIS. . . . . *Receptacle* naked: *Down* hair-like: encompassed by awned chaff: *Cal.* equal.

(2) *Flowers in globular heads.*

CARLI'NA. . . . . *Cal.* radiate: *Rays* coloured.

ARC'TIUM. . . . . *Cal.* scales bent inwards at the points, and hooked.

CAR'DUUS. . . . . *Cal.* with thorny scales; bellying: *Recept.* hairy.

ONOPOR'DON. . . . . *Cal.* with thorny scales; bellying *Recept.* like a honey-comb.

SERRA'TULA. . . . . *Cal.* nearly cylindrical; tiled: scales rather acute but not thornlike.

[Centaurea nigra.]

(3) *Florets all tubular.*

EUPATO'RIUM. . . . *Recept.* naked: *Down* feathered: *Cal.* tiled: *Pistil* very long.

SANTOLI'NA. . . . . *Recept.* chaffy: *Down* none: *Cal.* tiled; hemispherical.

BI'DENS. . . . . *Recept.* chaffy: *Down* awn-like: *Cal.* tiled.

[Senecio vulgaris. Tanacetum vulgare. Tussilago Petasites. Aster Tripolium.

SUPERFLUA.

(1) *Florets all tubular.*

ARTEMIS'IA. . . . . *Recept.* almost naked: *Down* none: *Florets* in the circumference without a petal.

TENACE'TUM. . . . . *Recept.* naked: *Down* only a sort of border: *Bloss.* of the circumference 3-cleft.

CONY'ZA. . . . . *Recept.* naked: *Down* hair-like: *Bloss.* of the circumference 3-cleft.

GNAPHA'LIUM. . . *Recept.* naked: *Down* feathered, or hair-like: *Cal.* with skinny concave scales.

[Senecio vulgaris. Tussilago Petasites, hybrida. Aster Tripolium. Erigeron. Bidens.]

(2) *Flowers radiate.*

BEL'LIS. . . . . *Recept.* naked: *Down* none: *Cal.* simple, with equal scales.

MATRICA'RIA. . . . *Recept.* naked: *Down* none: *Cal.* tiled; scales acute.

CHRYSAN'THEMUM. *Recept.* naked: *Down* none: *Cal.* the inner scales membranaceous.

DORO'NICUM. . . . *Recept.* naked: *Down* hair-like: *Strap-shaped* florets, without down.

I'NULA. . . . . *Recept.* naked: *Down* hair-like: *Anthers* with 2 bristles at the base.

ERI'GERON. . . . . *Recept.* naked: *Down* hair-like: *Bloss.* in the circumference very slender.

SOLIDA'GO. . . . . *Recept.* naked: *Down* hair-like: *Bloss.* of the circumference about 6; remote.

CINERA'RIA. . . . . *Recept.* naked: *Down* hair-like: *Cal.* equal; simple.

SENE'CIO. . . . . *Recept.* naked: *Down* hair-like: *Cal.* with the scales dead at the ends.

TUSSILA'GO. . . . . *Recept.* naked: *Down* hair-like: *Cal.* scales somewhat membranaceous.

AS'TER. . . . . *Recept.* naked: *Down* hair-like: *Cal.* scales the point standing out.

AN'THEMIS. . . . . *Recept.* chaffy: *Down* none: *Cal.* hemispherical.

ACHILLE'A. . . . . *Recept.* chaffy: *Down* none: *Cal.* oblong: *Strap-shaped* florets about 5.

FRUSTRANEA.

CENTAU'REA. . . . . *Recept.* bristly: *Down* hair-like: *Bloss.* of the circumference tubular.

NECESSARIA.

FILA'GO. . . . . *Recept.* naked: *Down* none: *Female florets* among the scales of the calyx.

CELEN'DULA. . . . . *Recept.* naked: *Down* none: *Seeds* membranaceous.

[Tussilago Farfara. (St.) Erigeron.]

ÆQUALIS.

TRAGOPO'GON. *Receptacle* naked: *calyx* simple: *down* feathered.

T. Calyx as long as the rays of the blossom: leaves entire, praten'se. quite straight: fruit-stalk cylindrical.

E. bot. 434–*Ludw.* 49–*Kniph.* 9–*Fl. dan.* 906–*Lonic.* i. 95. 4–*Fuchs.* 821–*J. B.* ii. 1059. 1–*Trag.* 280–*Dod.* 256. 2–*Lob. obs.* 297. 2, *and ic.* i. 550. 2–*Ger. em.* 735. 2–*Pet.* 15. 6–*H. ox.* vii. *row* 1. 1–*Matth.* 537–*Ger.* 595. 2.

Blossoms yellow, expanding about 3 in the morning, and closing between 9 and 10. LINN. Unless the sky is cloudy. RELHAN. *Calyx* in specimens gathered in Huntingdonshire always exactly equal with the blossom, in Norfolk invariably exceeding it. The stems of the latter much shorter. Are they not distinct species? WOODWARD. Segments of the calyx in the Cornish plants always much longer than the blossom. Mr. STACKHOUSE. Whole *plant* smooth, stiff, strong, upright. *Leaves* very long and narrow, tapering. *Calyx*, leaves purplish at the edge. *Anthers* purple. *Pollen* yellow. *Seeds* crooked. *Receptacle*, there are glandular substances in the little hollows at the base of each floret, which, when the blossoms fall, turn brown, the receptacle remaining white.

Yellow Goat's-beard. Go to bed at Noon. Meadows and pastures. B. June.*

porrifo'lium. T. Calyx longer than the rays of the blossom: leaves entire, stiff and straight: fruit-stalks thickening upwards: florets very narrow, lopped.

Jacq. ic. i.–*E. bot.* 638–*Kniph.* 7–*Fl. dan.* 797–*Ger.* 595. 1–*Park. par.* 511. 8–*Matth.* 538–*Dod.* 256. 1–*Lob. obs.* 297. 1, *and ic.* i. 550. 1–*Ger. em.* 735. 1–*Park.* 412–*Pet.* 15. 7 *and* 8–*H. ox.* vii. 9. 5.

Stem-leaves shorter than in T. *pratense*, scarcely longer than the space between the joints. *Calyx* about 1-3d longer than the blossom. *Blossom* purple. WOODWARD.

Purple Goat's-beard. Salsafy. Meadows and pastures. In Cornwall, and fields about Carlisle and Rose Castle, Cumberl. Marshes near Long-Reach, below Woolwich, and meadows near Edmondton. [In upland pastures not unfrequent. WOODWARD.] B. May.†

PI'CRIS. *Receptacle* naked: *calyx* double: *down* feathered: *seeds* with transverse furrows.

echioi'des. P. Outer calyx of 5 leaves, larger than the inner; the inner awned.

* Before the stems shoot up, the roots, boiled like Asparagus, have the same flavour, and are nearly as nutritious. Cows, sheep, and horses eat it. Swine devour it greedily. Goats are not fond of it.

† The roots are esculent, and when cultivated in gardens are called Salsafie.

Curt. 150–*Pet.* 12. 12–*Ger.* 655. 2–*J. B.* ii. 1029. 1–*Lob. ic.* i. 577. 2–*Ger. em.* 798. 2–*H. ox.* vii. 5. 38.

Root-leaves oval, scolloped, stiff with numerous warty protuberances, which, as also the ribs and edges, are set with short thorn-like hairs. *Stem* firm, cylindrical, scored, usually purplish, much branched; with scattered, stiff, thorn-like hairs. *Leaves* heart-spear-shaped, waved at the edge, set with sharp stiff hairs, particularly on the edge and mid-rib. *Flowers* single, on fruit-stalks. *Fruit-stalks* somewhat thickening upwards. *Calyx*, leaves of the *outer* heart-shaped, taper-pointed, ending in a sharp awn, very much expanding, fringed with stiff hairs; scales of the *inner* fringed on the back. *Down* of the length of the inner calyx, on a foot-stalk 3 or 4 lines long. *Seeds* shining, very beautiful when viewed with a glass. Woodward. *Bloss.* yellow, expanding at 4 or 5 in the morning, and never closing before noon; sometimes they remain open till 9 at night.

Common Ox-tongue. Lang de bœuf. Borders of cornfields. [Between Stockton and Norton; Durham. Mr. Robson.]

A. July, Aug.*

P. Calyx loose: leaves entire: fruit-stalks scaly up to the calyx. Hieracioi'des.

E. bot. 196–*Ger.* 234. 8–*Ger. em.* 298. 7–*J. B.* ii. 1029. 2.

Leaves spear-shaped. *Fruit-stalks* with scattered awl-shaped scales extending up to the calyx, till the calyx becomes nearly tiled. *Down* scarcely feathered. Linn. *Stem* firm, scored, rough with stiff hairs. *Leaves* rough, the *lower* on leaf-stalks, the *upper* sitting, spear-shaped, pointed, toothed; the *uppermost* strap-spear-shaped. *Fruit-stalks* branched, each branch bearing 1 flower. *Cal.* scarcely to be called double, the loose scales on the top of the fruit-stalk approaching to and at length tiled with the calyx, the leaves of the inner row nearly strap-shaped, parallel, hairy on the outside, exactly the length of the feather. *Feather* sitting, thinly downy. *Seeds* longitudinally and transversely furrowed. Woodw. *Flowers* yellow.

Hedypnois Hieracioides. Huds. *Yellow Succory. Hawkweed Oxtongue.* Borders of cornfields in a calcareous soil. B. July.

SON'CHUS. *Recept.* naked: *calyx* tiled, bellying, *down* hair-like.

S. Fruit-stalks hispid: leaves notched: flowers in bunches. canaden'sis.

* This is an agreeable pot-herb when young. The juice is milky, but not too acrid.

Fl. dan. 182–*Clus.* ii. 147. 1–*Ger. em.* 294. 7–*Park.* 808. 1 –*Park.* 807. 1–*J. B.* ii. 1006–*Ger.* 231. 6.

Terminating lobe of the leaves very large. *Flowers* blue, sometimes white.

Blue Sowthistle. Mountainous pastures. Borders of cornfields about Willington and Howden Pans, Northumberland. Wallis. *Northumb.* 180. A.

Through a mistake of the Synonyms in Sp. Pl. this had always been supposed the S. *alpinus*, but the fruit-stalks in that are scaly, in this set with bristly hairs. See Smith's Icon. Fasc. 1. p. 21.

arven'sis. S. Fruit-stalks and calyxes rough with hair, in a sort of umbel: leaves notched, heart-shaped at the base.

Curt. 265–*E. bot.* 674–*Pet.* 14. 6–*Fuchs.* 319–*J. B.* ii. 1018. 1–*Lob. obs.* 119. 3, *and ic.* i. 237. 1–*H. ox.* vii. 6. 12–*Lonic.* 92. 1–*Matth.* 765–*Ger.* 231. 7–*Ger. em.* 294. 8–*Park.* 808. 3.

Flowers expand between 6 and 7, and close between 11 and 12 in the forenoon. Linn. *Root* creeping. Curt. *Leaves* embracing the stem; segments triangular, toothed; teeth sharper and more thorny than those of S. *palustris*; the upper spear-shaped, but not tapering out to so great a length. *Seeds* oval, compressed, longitudinally and transversely furrowed. *Down* sitting. Woodw. *Stems* rough with glandular bristly hairs. *Leaves* embracing the stem, perfectly smooth, except at the edges, which are almost thorny. *Hairs* of the calyx and fruit-stalks pale green, terminated by yellow globules.

Corn, or *Tree Sowthistle.* Cornfields and ditch banks. P. Aug.*

palus'tris. S. Fruit-stalks and calyxes rough with hair, in a sort of umbel: leaves notched, arrow-shaped at the base.

Curt. 298–*Fl. dan.* 1109, *and* 606–*Pet.* 14. 7–*Clus.* ii. 147. 3–*Ger. em.* 294. 9–*Park.* 808. 2–*H. ox.* vi. 9, *row* 3. 11.

In habit it is very distinct from S. *arvensis*, but its structure is so much the same, that one might suppose the S. *palustris* to have originated from *arvensis*. *Flowers* clustered, expand at 6 or 7, and close at 2 in the afternoon. Linn. *Root* not creeping. *Stems* several, 6 to 10 feet high. Curt. *Root* when old forming a large stool. *Stems* 4 to 8 feet high. *Lower stem-leaves* very large; upper arrow-shaped, and embracing the stem at the base,

* The flowers follow the course of the sun very regularly. Cows and goats eat it. Horses are very fond of it.

segments spear-shaped, variously curved, 2 or 3 pair, with a terminating one very long, smooth, finely toothed at the edge, the principal rib running near the inner edge; the *upper-leaves* arrow-spear-shaped, lengthened out into a long point. *Floral-leaves* awl-shaped. WOODWARD. *Bloss.* yellow.

Marsh Sowthistle. Watery places and banks of rivers; on those of the Thames about Greenwich, Blackwall, and Poplar.
P. July, Aug.

S. Fruit-stalks cottony: calyxes smooth. olera'ceus.

E. bot. 843.

Leaves closely embracing the stem. *Fruit-stalks* at length becoming smooth. LINN. *Upper leaves* frequently jagged and indented, like the lower, but not so deeply. WOODW. *Flowers* yellow.

Sowthistle. Hare's Lettuce. Milkweed.

Var. 1. *lævis.* Leaves smooth, the lower with winged clefts, the lower segments long.

Curt. 123–*Ger.* 231. 5–*Clus.* ii. 146. 1–*Dod.* 643. 1–*Lob. obs.* 119. 1, *and ic.* i. 235. 2–*Ger. em.* 292. 3–*H. ox.* vii. 3. 1–*Pet.* 14. 10–*Ger.* 230. 4–*Matth.* 497.

Common Sowthistle. Cultivated ground, especially in a rich soil, dung-hills, and hedges. A. June—Aug.

Var. 2. Segments fewer, the terminating one triangular and very broad. RAY.

Fl. dan. 682–*Blackw.* 130–*Ger.* 230. 3–*Ger. em.* 292. 4–*Park.* 806. 8–*J. B.* ii. 1016. 1–*H. ox.* vii. 3, *row* 1. 2–*Pet.* 14. 8–*Matth.* 496, *S. aspera.*

Var. 3. *asper.* Leaves prickly, jagged, shining on the upper surface, the edge waved and set with thorny teeth; the lower lobes rounded.

Fl. dan. 843–*Blackw.* 30–*Ger.* 229. 2–*Park.* 229. 2–*J. B.* ii. 1016. 2–*Fuchs.* 675–*Pet.* 14. 5.

Stem 2 to 3 feet high, upright, thick, angular: the angles thin, skinny, tinged with purple. *Leaves* with winged clefts; segments variously jagged and toothed, some extending almost to the mid-rib, the lower leaves a foot long: mib-rib broad, white, and smooth. *Fruit-stalks* soon losing their cotton. *Cal.* scales each with 2 or 3 little thorns on the back.

[Uncultivated ground, sides of roads and hedges.]
May, about the latter end. ST.

Var. 4. Leaves prickly, entire. ST.

Fuchs. 674–*Dod.* 643. 3–*Lob. obs.* 118. 2. 3, *and ic.* i. 235. 1–*Ger. em.* 291. 2–*J. B.* ii. 1014. 2–*Park.* 803. 1–*H.*

ox. vii. 2, *row* 3. 5–*Pet.* 14. 4–*Lonic.* i. 93. 1–*Dod.* 643. 2–*Lob. ic.* i. 234. 2–*Ger. em.* 291. 1–*H. ox.* vii. 2. 8.

Fields, and in woods where the underwood has been cleared. July to Nov. 20. No other variety growing near it.

Var. 5. Leaves inversely egg-shaped, tapering below into leaf-stalks.

Pluk. 61. 5–*Pet.* 14. 1.

Cornfields about London.

Var. 6. Leaves strap-oblong, rounded at the end.

Pluk. 62. 4–*Pet.* 14. 3.

Var. 7. Stemless; leaves spread on the ground, deeply wing-cleft; segments sharply toothed.

I found this singular variety on Portland Island in the month of May. It had a yellow blossom, and the fruit-stalks and calyxes smooth, as in the other varieties of the Sonchus oleraceus, but the flowers sat close upon the root. This circumstance may possibly be the effect of its maritime situation, but if not, it may prove to be a new species, as is not improbable, because I have observed some other varieties assume their usual habit, and their usual size, when growing near the sea, only sometimes the whole plant, except the blossom, in such situations, assumes a purplish red colour.*

LACTU'CA. *Receptacle* naked: *calyx* tiled, cylindrical, the scales membranaceous at the edge: *down* hair-like, on a pedicle.

Scari'ola. L. Uppermost leaves upright, their mid-rib prickly on the back.

E. bot. 268–*Fuchs.* 301–*Dod.* 646–*Ger. em.* 309. 3–*J. B.* ii. 1003–*Pet.* 15. 3–*H. ox.* vii. 2. 17–*Matth.* 522–*Lob. obs.* 118. 1, *and ic.* i. 234–*Park.* 814. 2–*Barr.* 135–*Trag.* 259.

Leaves, the lowermost also indented. Ray. *Stem-leaves* constantly with deeper winged clefts than those of L. *virosa*. *Flowering branches* pointing upward, not expanding. *Flowers* smaller. *Pedicle* of the *down* much shorter. Woodw. *Blos.* yellow.

Prickly, or *Mild-scented Lettuce*. On rubbish, sides of cornfields, ditch banks, and stony ground. Isle of Ely. [Burwell, near Newmarket. Mr. Turner.] B. Aug.

* The leaves are good amongst other pot-herbs. They are a very favourite food with hares and rabbits. Sheep, goats, and swine eat it. Horses are not fond of it. The *Aphis Sonchi* lives upon it.

L. All the leaves horizontal, toothed: their mid-rib prickly on the back. viro'sa.

Collin obs. vi. *præf. p.* ix.–*Woodv.* 250–*J. B.* ii. 1005–*Pet.* 15. 2–*H. ox.* vii. 2. 16.

Stem prickly below. *Leaves* arrow-shaped, sitting, the edge, and especially the keel, prickly. A variety of L. *Scariola* according to M. Gerard and Haller. LINN. *Leaves*, the lowermost entire, not wing-cleft. RAY. *Stem* 2 to 4 feet high. *Root-leaves* oblong, wedge-shaped, toothed at the edge; *stem-leaves* arrow-shaped, embracing the stem, either entire or wing-cleft, sharply toothed; *flower-leaves* arrow-shaped, half embracing the stem, broad at the base, tapering to a sharp point, 1 at the base of each flowering branch. *Flowering-branches* expanding. *Flowers* sitting, or on short fruit-stalks. *Floral-leaves* similar to the stem-leaves but smaller, 1 at the base of each fruit-stalk, and others still smaller on the fruit-stalks. *Calyx*, scales unequal, spear-shaped. *Seeds* furrowed and rough. WOODW. *Bloss.* numerous, yellow, opening about 7, and closing about 10 in the forenoon. *Seeds* black.

Wild Lettuce. Strong-scented Lettuce. Ditch banks. [Borders of fields. In a stone quarry at Thorp Arch, Yorkshire. Mr. WOOD. World's End, near Stepney, and banks of the Thames between Blackwall and Woolwich. Mr. JONES. Old walls in Bungay, Suffolk. WOODWARD.] B. July, Aug.*

Var. 2. Leaves entire.

Pet. 15. 1–*Trag.* 268–*Lonic.* i. 91. 3–*Lob. adv.* 89, *and ic.* i. 241. 1–*Ger. em.* 309. 1–*Park.* 813.

L. Scariola β Huds. Dr. STOKES.
With variety 1, but less frequent. RAY.

L. Leaves halberd-strap-shaped, sitting; mid-rib prickly on the back. salig'na.

Jacq austr. 250–*E. bot.* 707–*Hall. jen.* 4, *at p.* 207–*C. B. pr.* 68. 1–*Park.* 783. 4–*H. ox.* vii. 6. 18–*Pet.* 15. 4.

Leaves perpendicular, nearly as in L. *Scaliora*. LINN. *Leaves* arrow-shaped at the base; the lower with winged clefts; segments few, alternate, strap-shaped, finely toothed, with a sharp point at the end, somewhat hooked, the terminating one long: the upper entire, strap-shaped; the midrib not always prickly.

* The juice smells like opium. It is milky, acrid and bitter. Dr. Collin relates 24 cases of dropsy, out of which 23 were cured by taking the extract prepared from the expressed juice, in doses from 18 grains to 3 drams in the 24 hours. It commonly proves laxative, promotes urine and gentle sweats, and removes the thirst. It must be prepared when the plant is in flower.

Floral-leaves arrow-shaped, broad at the base, tapering to a point. *Flowers* nearly sitting, small. WOODWARD. *Bloss.* yellow.

Narrow-leaved Lettuce. Ditch banks and pastures in a chalky soil. A. Aug.

PRENAN'THES. *Receptacle* naked: *calyx* double: *down* hair-like, nearly sitting: *florets* in a single row.

mura'lis. P. Florets 5: leaves notched.

Curt.–E. bot. 457–*Fl. dan.* 509–*Clus.* ii. 146. 2–*Lob. obs.* 119. 2, *and ic.* i. 236. 1–*Ger. em.* 293. 5–*Park.* 805. 2–*J. B.* ii. 1004–*Pet.* 15. 5.

Down on a very short pedicle. *Root-leaves* on long leaf-stalks, deeply notched; lower segments few, small, somewhat oval, the terminating one large, somewhat triangular, with 5 lobes, resembling the leaves of Ivy in its creeping state. *Flowering branches* subdivided. *Fruit-stalks* slender, each with 1 flower. WOODWARD. *Stem-leaves* embracing the stem, deeply notched; *segments* opposite, toothed, the terminating one largest. *Calyx, outer,* scales 5, spear-shaped; *inner* strap-shaped, generally coloured. *Seeds* oblong, compressed, scored. *Down* on a flat circular substance, supported by a little pedicle.

Var. 2. Stem-leaves spear-arrow-shaped.

Stems smooth, purplish. *Branches* from the bosom of the leaves. *Stem-leaves* smooth, embracing the stem, the lower toothed, the upper very entire. *Floral-leaves* arrow-shaped, at the subdivisions of the fruit-stalks. *Calyx* purple; *outer,* scales rarely 4. spear-shaped. *Bloss.* yellow; *florets* with 5 teeth. *Germen* heart-shaped. *Down* nearly sitting, but the pedicle lengthens as the seed ripens.

Wall Ivy-leaf. Walls. Shady woods. P. July.

LEON'TODON. *Receptacle* naked: *calyx* tiled; the inner scales parallel, equal: *down* hair-like.

(1) *Down on a pedicle.*

officina'le. L. Outer scales of the calyx entire, reflected: leaves smooth, notched and acutely toothed.

Curt.–E. bot. 510–*Mill. ill.–Blackw.* 501–*Woodv. p.* 7–*Fl. dan.* 574–*Walc.–Ger.* 228. 1–*H. ox.* vii. 8. *row* 2. 1–*Dod.* 636. 1–*Lob. obs.* 117. 2, *and ic.* i. 232. 2–*Ger. em.* 290. 1–*Park.* 780. 1–*Pet.* 11. 7–*Matth.* 506–*Fuchs.* 680–*J. B.* ii. 1035–*Trag.* 262–*Lonic.* i. 92. 2–*Blackw.* 1.

Leaves varying from wing-cleft, in a very dry situation, to nearly entire in a very moist one. *Calyx*, scales perfectly smooth. *Seeds* furrowed longitudinally, sharply toothed upwards. *Down* on a long pedicle; rays simple, WOODWARD. The notches in the leaves hollowed out like the teeth in a large timber saw. *Seeds* flat, scored, prickly upwards. *Bloss.* yellow, expanding about 5 or 6 in the morning, and closing early in the afternoon.

Common Dandelion. Piss-a-bed. Meadows, pastures, road sides, ditch banks, &c. P. April—Sept.

Var. 2. Leaves narrower, fewer, more deeply cloven. Seeds reddish brown. RAY.

Pet. 11. 8.

Grows along with var. 1. and flowers most of the summer.*

L. Outer scales of the calyx upright, close to the inner, entire: leaves spear-shaped, very entire, or only toothed. Tarax'acon.

E. bot. 553—*Scop.* 48. *at* ii. *p.* 100.

Root-leaves oblong, broader towards the end, pointed, with teeth, smooth, mid-rib red. *Calyx* smooth; outer scales egg-shaped, pointed, somewhat membranaceous at the edge; the inner strap-shaped. LYONS. *Calyx*, the lowermost scales at first upright, afterwards bent back. HUDS. Mr. Relhan informs me that he has examined many plants lately, and has no doubt of its being a distinct species.

Hedypnois paludosa. SCOP. carn. n. 958. *Leontodon Raii.* GOUAN. ill. 55. *Leontodon Taraxacum paludosum.* LIGHT. Fl. Scot. 432. *Picris scapo unifloro, foliis glabris semipinnatis, calyce levi.* HALL. hist. n. 26. ST. *Leontodon Taraxacum* δ *palustris.* Huds. and Bot. Arr. ed. ii.

Hinton Moor, Cambridgeshire. LYONS. Moist places on the sides of mountains in the Isle of Skye. LIGHT. P. June.

* Early in the spring, whilst the leaves are yet white, and hardly unfolded, they are an excellent ingredient in sallads. The French eat the roots, and the blanched leaves, with bread and butter. Children that eat it in the evening experience its diuretic effects, which is the reason that other Europæan nations, as well as ourselves, vulgarly call it Piss-a-bed. When a swarm of Locusts had destroyed the harvest in the island of Minorca, many of the inhabitants subsisted upon this plant. The expressed juice has been given, to the quantity of 4 ounces, 3 or 4 times a day; and Boerhaave had a great opinion of the utility of this and other lactescent plants in visceral obstructions.—Goats eat it; swine devour it greedily; sheep and cows are not fond of it; horses refuse it; small birds are fond of the seeds. The *Phalæna Fascelina* and the *Thrips Physapus* feed upon it. LINN.

(2) *Down sitting.*

autumna'le. L. Stem branched: fruit-stalks scaly: leaves spear-shaped, toothed, very entire, smooth: down mostly sitting.

E. bot. 830–*Fuchs.* 320–*J. B.* ii. 1031–*Trag.* 265–*Dod.* 639. 4–*Ger. em.* 297. 3–*Lonic.* i. 92. 3–*Ger.* 233. 4–*Dod.* 639. 4–*Lob. obs.* 120. 1, *and ic.* i. 237. 2–*Ger. em.* 296. 2–*Park.* 794. 4–*H. ox.* vii. 7. 6–*Matth.* 766–*Pet.* 12. 1.

Root bitten off as in *Scabiosa Succisa*. *Flowers* opening at 7, and closing at 3 in the afternoon. It is difficult to say under what genus it should be placed. It differs from *Scorzonera* in its sitting down; from *Crepis* in its simple tiled calyx; and from *Leontodon* in its sitting feathered down. Linn. *Down* of the seeds of the circumference sitting, those of the centre sometimes on a short pedicle. Leers. *Root* in the 2d or 3d year dying at the end, appearing as if bitten off. *Stems* sometimes thrice as tall as the leaves. *Leaves* spear-shaped, quite smooth; teeth bluntish. *Flowering branches* nearly of an equal height. *Calyx* inversely egg-shaped, tapering downwards, beset with tapering blackish hairs, and a small quantity of cottony substance. *Down* of the central florets sometimes tapering out into a kind of short pedicle; feathered, brownish white, which colour readily distinguishes it from *Hypochæris radicata*, which it very much resembles, and the others of the same tribe which flower in the meadows at the same time. Sr. *Root* thick, sending out lateral fibres. *Leaves* nearly strap-shaped, smooth; *hairs* simple. *Stem* and *fruit-stalks* slightly scored, smooth. *Fruit-stalks* mostly forked; the scales resembling the outer ones of the calyx. *Calyx*, the outer scales much shorter, upright, a little hairy at the ends; the inner with a row of longish black hairs along the back. *Florets* yellow on both sides. *Style* and *summit* set on the upper part with very short and exceedingly fine, white, bristly hairs. *Down* about the length of the seed, rather longer than the tubular part of the blossom, the feather-like fibres on the hairs extremely fine. *Seeds* compressed, scored.

Hedypnois autumnale. Huds. E. bot. *Autumnal Dandelion. Yellow Devil's Bit.* Meadows and pastures. P. July, Aug.

Var. 2. Leaves hairy. Ray.

With variety 1, and with us the most common. Sr.

Var. 3. Leaves wing-cleft.

Ger. 233. 3–*Pet.* 12. 2.

Hieracium præmorsum laciniatum. R. Syn. 164.

Pastures about London. July, Aug.

Var. 4. *Dwarf.* Leaves pointed. PET.

Pet. 12. 3.

Hedges about London. July, Aug.

Hieracium folio acuto minus. R. Syn. 164. (ST.)

Var. 5. *Dwarf.* Leaves blunt, like those of *L. Taraxacum.* PET.

Pet. 12. 4.

With variety 4. July, Aug.

L. hir'pidum. All the scales of the calyx upright: leaves toothed, hispid: very entire, hispid: bristle-like hairs forked.

Curt. 314–*E. bot.* 554–*Fl. dan.* 862. (The figures of the older Botanists are not sufficiently exact to allow of our knowing whether they intended them for this or for the next species.)

A strap-shaped *floral-leaf* below the flower, which is not in *L. hirtum.* *Florets of the circumference* greenish on the outside. *Down* sitting, feathered. A plant difficult to make out, from the different synonyms referred to by different authors. *Flowers* open at 4 in the morning, and close at 3 in the afternoon. LINN. *Leaves* on leaf-stalks, spear-shaped, somewhat hoary; hairs forked and simple. *Seeds* slender, rough, striated, the upper part of the ridges toothed, the lower warty; as long as the down. WOODW. *Root* bitten off. *Stalk* 6 to 16 inches high. *Leaves* indented toothed. *Hairs* with 2 or 3 points, or simple. *Calyx* with simple hairs. *Down* white, with 11 large rays just longer than the seed, with as many intermediate ones. Dr. STOKES. The *floral-leaf* mentioned by Linnæus is not always present.

Rough Dandelion. Meadows and pastures. Meadows near Worsley Mill, and near Chaddock Hall, Lancash. Mr. EVANS. [Lulworth Cove, Dorsetshire. St. Vincent's Rocks, Bristol.] P. May—Sept.

Var. 2. Leaves entire, with sometimes shallow teeth, spear-shaped, rough. LINN.

Clus. ii. 141. 2–*Ger. em.* 302. 3–*Park.* 799. 12–*J. B.* ii. 1038–*H. ox.* vii. 7. 12. *row* 2. *f.* 4–*Pet.* 11. 5–*Ger.* 238. 3. (These figures are cited on the authority of RAY.)

Dens leonis montanus angustifolius. R. Syn. 171.—*Leontodon Taraxacum* γ HUDS.—*Hieracium incanum,* according to Reichard. ST.

Near the top of y Glyder mountain near Llanberris.

L. hir'tum. All the scales of the calyx upright: leaves toothed, hairy; hairs undivided. LINN. Outer row of seeds downless. HALLER.

Curt.-E. bot. 555-Fl. dan. 901.

Very much resembling *L. hispidum*, but distinct. *Fruit-stalks* and *calyxes* not so hairy, nearly smooth. *Leaves* stiffish, and as it were dry to the touch, and the central parts very much curled when dry; segments slanting; the hairs undivided at the point. *Calyx* nodding before flowering, channeled when the seeds are ripe; the outermost *scales* dilated on each side at the base, with a fold between. *Bloss.* the florets of the circumference yellow underneath, and not greenish. LINN. *Stem* 6 inches high. *Seeds* of the circumference crowned with a shallow leafy ornament, instead of down; those of the centre with a feathered down. HALL. A much smaller plant than the L. hispidum, and its calyx is smooth, but the leaves are hairy. In L. autumnale the calyx is hairy and the leaves smooth. M. AFZELIUS. The want of down to the outer row of seeds sufficiently distinguishes this plant from its congeners. *Flowers* yellow.

Hedypnois hispidum, hirtum ♂ Huds. *Deficient Dandelion.* CURT. Heaths and commons [Frequent in Devonshire and Cornwall. Pastures and cornfields in Astley and Tildesley, Lancash. Mr. EVANS.] P. June—Aug.

HIERA'CIUM. *Recept.* generally naked: *calyx* tiled, egg-shaped: sometimes double: *down* mostly sitting, hair-like; rarely feathered.

(1) *Stalk leafless, 1-flowered: Down simple.*

Pilosel'la. H. Leaves very entire, egg-shaped, cottony underneath: suckers creeping.

Curt. 279-*Fl. dan.* 1110-*Ludw.* 144-*Walc.-Blackw.* 365-*Fuchs.* 605-*Trag.* 278-*Lonic.* i. 95 3-*J. B.* ii. 1039-*Park.* 690. 2-*H. ox.* vii. 8. 3-*Pet.* 11. 1-*Dod.* 67-*Lob.* 254. 1, *and ic.* i. 479. 1-*Ger. em.* 638. 2-*Park.* 690. 1-*H. ox.* vii. 8. *row* 1. *f.* 1-*Ger.* 513. 2.

Bloss. red on the outside, opening at 8 in the morning, and closing about 2 in the afternoon. LINN. *Suckers* covered with cotton, and beset with hairs, lying close to the ground, not throwing out flowering stems in the autumn, as *H. dubium* and *H. auricula.* *Florets* with a broad purple stripe on the under side. WOODW. *Calyx* hairs terminated by black globules. *Bloss.* pale yellow within.

Creeping Mouse-ear. Mouse-ear Hawkweed. Very dry meadows, pastures, and walls. P. May—Sept.*

* This differs from the other lactescent plants, being less bitter, and more astringent. It is esteemed hurtful to sheep. An insect of the Cochineal genus (*Coccus polonicus*) is often found at the roots. *Act. Upsal* 1752. Goats eat it. Sheep are not fond of it. Horses and cows refuse it.

H. Leaves oblong, entire, toothed; stalk almost naked; calyx hairy. alpi'num.

Lightf. 18. *at p.* 434–*Allioni* 14. 2–*Col. ecphr.* ii. 30. 1–*H. ox.* vii. 7. 5–*Pet.* 11. 2–*Ray* 6. 2. *at p.* 168–*(Fl. dan.* 27, *may possibly be the same plant in a cultivated state, for Mr. Ray tells us it then assumes such an appearance.)*

Leaves egg-oblong, slightly toothed, sprinkled on both sides with white expanding hairs. *Stalk* thick, sprinkled with white hairs brown at the base. *Floral-leaves* small, 1 or 2 on the upper part of the stalk. *Calyx* swoln, set with numerous white projecting hairs. *Bloss.* yellow. LINN. *Calyx* concealed as it were by its hairs. MURR. About 3 inches high. Whole plant set with long hairs, especially the fruit-stalk and the calyx. *Leaves* oblong egg-shaped, tapering downwards into long leaf-stalks. *Fruit-stalks* but little longer than the leaves.

Mountain Hawkweed. Mountains near the summits in dry soil. Rocks on Glyder and Trigfylchau near Llanberris, on Ben Croochid and near Loch Awe, and many other of the Highland mountains. Llyn y Cwyn near Snowdon. PENN. [On dry rocks on Ben Bourde. On Malghyrdy, Ben Lawers, and Lochain y Gair. Mr. BROWN.] P. July, Aug.

H. Leaves spear-shaped, toothed, smooth; stalk almost naked: calyx hairy. Tarax'aci.

Retz. 4. 2–*Allion.* 31. 1.

Doubtful whether a hybrid plant, or a new species. The *leaves* are so much like those of *L. autumnale*, and the *stalk* and *flowers* so exactly like those of *Hieracium alpinum*, that if the stalk and flower of the latter were added to the leaves of the former, you would have a fair specimen of the plant in question. *Leaves*, teeth, some shorter, others longish, often bent forwards. *Stalk* with the minute rudiments of leaves, hairy, thickening towards the flower, swelling at the end like the calyx, with brown hairs. Entirely different from *L. aureum*, the *calyx* being very much tiled which can hardly be said of *L. aureum* or *autumnale*. LINN. *Down* sitting, feathered, LIGHTF. on whose authority it principally stands as a British plant, but I have never seen it, and M. Afzelius doubts its being native with us.

Hedypnois autumnale Taraxaci. HUDS. which see. Sides of mountains in wet ground, but not common in Wales. Ben-na-Caillich mountain in the Isle of Skye. [On Rhiwr Glyder about 100 yards above Llyn y Cwn. Mr. GRIFFITH.] P. June, July.

(2) *Stalk naked, many-flowered.*

H. Leaves entire, egg-oblong: suckers creeping. du'biuni.

Fl. dan. 1044.

Stem rough with hair. *Leaves* rough with hair, especially underneath. Larger than *H. Auricula* in all its parts. Occurs but rarely, possibly a mongrel production, or a variety of some species or other. LINN. *Stalk* smooth, from 6 to 9 inches high, with 3 to 6 flowers. HUDS. *Leaves* longer and narrower than in *H. Pilosella*, very slightly concave, hairy on both sides, but more sparingly than in *H. Pilosella*, green above; greyish, but not cottony underneath. *Stalks* upright, nearly smooth below, with mostly 2 flowers, rarely 1. *Pedicles* equal, straddling, which, as also the *calyxes*, cloathed with hairs terminated by black globules. *Florets* pale yellow on both sides. *Seeds* oval, scored; *down* sitting, as long as the calyx. Such were the appearances in June and July, but in autumn as follows: *Suckers* throwing out branches, and terminated by a flowering stem. *Branches* not rooting, with alternate leafy branches. *Stem* drooping at the base, with 5 and 6 flowers. *Fruit-stalks* alternate. *Floral-leaves* spear-shaped, 1 at the base of each flower, and similar ones on the fruit-stalks. Cultivated some years in my garden. The roots received from the North of England for *H dubium.* It approaches nearest to that species, and is, I apprehend, that plant, though somewhat varied. Mr. WOODWARD.

Creeping Hawkweed. Moistish mountainous situations. Fairfield mountain near Rydall, Westmoreland. P. July, Aug.

Auricu'la. H. Leaves very entire, spear-shaped: suckers creeping.

Fl. dan. 1111.

Leaves spear-shaped, rough with very small hairs. *Stalk* and *calyx* beset with black bristles. Being planted in a garden it rose the next year to 3 feet high, with flowers in a kind of umbel on long fruit-stalks. LINN. *Root* bitten off, with numerous simple fibres. *Suckers* leafy. *Stalk* upright, scarcely 6 inches high, somewhat hairy, hairs scattered. *Leaves* mostly very entire, pointed, naked. *Flowers* in a panicle, 3 to 6, yellow. HUDS.

Narrow leaved Hawkweed. On mountains. On Dalehead not far from Grass-mere, Westmoreland. P. July.

(3) *Stem leafy. Down sitting.*

sabau'dum. H. Stem upright, many flowered: leaves egg-spear-shaped, toothed, half embracing the stem.

Allion. 27. 2–*E. bot.* 349–*Fl dan.* 872–*Pet.* 13. 7–*Gmel.* ii. 14. 2–*J. B.* ii. 1030. 3–*H ox.* vii. 5. 59.

Receptacle in this and H. *umbellatum* naked, but rougher than in the other species. LINN. *Stem* sometimes branched from half or

two thirds of the way up; the uppermost branches often springing from one point in manner of an umbel; those below alternate. More distinguishable from H. *umbellatum* by the eye than by the specific differences. In branches where the top of the stem has been bitten off the leaves often assume the figure of those of H. *umbellatum*; add to this, that the fruit-stalks are often congregated in manner of an umbel, as in *Gmel.* ii. 14. 1, and *Fl. dan.* 872. See also variety 4. St. *Flowers* opening at 7 in the morning, and closing between 1 and 2. *Bloss.* yellow.

Shrubby Hawk-weed. Woods and hedges. P. July, Aug.

Var. 2. Leaves covered with a short and just perceptible down. Ray.

Gmel. ii. 14. 1–*Pet.* 13. 9.

Moist shady woods. Huns. Near Ulswater, Westmorel. Ray.

Var. 3. Leaves longer, with fewer teeth, 1 flower only on the stem.

Pluk. 37. 3–*Pet.* 11. 6.

On a dry bank at the edge of a wood in a lane leading from Hornhill to Rickmansworth, Hertfordshire. Ray.

Var. 4. Leaves broad spear-shaped, on very short leaf-stalks. St.

Pet. 13. 8.

[Perry Wood, near Worcester. St.]

H. Stem upright, panicle terminating: leaves spear-shaped, embracing the stem; glaucous underneath. — prenanthoi'des.

Allion. 27. 1 *and* 3.

Whole plant more or less hairy. Leaves fringed with hairs, edged with a few minute distant teeth; dark green above, glaucous green underneath. Flowers numerous, bright yellow, forming a panicle.

Hierocium spicatum. Allion. pedem. i. p. 208; but no trivial name could be more improper than *spicatum*, applied to a plant with a large spreading panicle. The glaucous green of the leaves is alone sufficient to distinguish this from all our other species.

Found by Mr. Dickson in woods in the South of Scotland. Linn. Tr. ii. 288. P. June, July.

H. Stem panicled: leaves embracing the stem, toothed, smooth: calyxes hispid. — paludo'sum

Allioni 28. 2 *and* 31. 2–*Fl. dan.* 928–*Ger.* 236–*Ger. em.* 300–*J. B.* ii. 1033. 1–*J. B.* ii. 1026. 3–*H. ox.* vii. 5. 47.

Stem 1 to 2 feet high, hollow, in which it differs from H. *murorum*; furrowed, smooth, generally bright purple at the base. *Leaves* smooth, alternate, the lower on leaf-stalks, oval-spear-shaped; the upper spear-shaped, deeply toothed towards the base, entire at the summit; the uppermot very entire. *Leaf-stalks* and mid-ribs of the leaves sometimes purple, especially underneath. *Fruit-stalks* smooth. *Flowers* solitary, smaller than in H. *murorum*. *Cal.* scales strap-spear-shaped, with numerous black hairs on the back. Woodward. *Leaves* notched like those of Dandelion but not so deeply. *Flowers* bright yellow.

Marsh Hawkweed. Moist meadows and woods, and sides of rivulets in the mountainous parts of Craven, Yorkshire, and sides of rivers, both in the Lowlands and Highlands. [Hardrow Force in Wensley-dale, Yorkshire. Mr. Wood.—On the west side of the river just below the bridge at Kirkby Lonsdale, Westmoreland. Dr. J. E. Smith.—Near Rydal, Westmoreland. Mess. Crowe and Woodward.—At the Hermitage near Taymouth. St.—Marshy ground at the foot of Pentland hills. Dr. Hope.] B. July.

muro'rum. H. Stem branched: root-leaves egg-shaped, toothed: stem-leaf smaller.

Barr. ic. 342–*Tabern.* 504. 2–*J. B.* ii. 1034. 1–*Ger. em.* 304. 1–*H. ox.* vii. 5. 54–*Pet.* 13. 2 *and* 3–*Trag.* 276–*Munt.* 233–*Pet.* 11. 4.

Root simple. *Stem* single, a foot high, of equal thickness, not very strong, beset with hairs, with a single branch, sometimes none. *Root-leaves* on leaf-stalks, somewhat toothed, beset with scattered hairs; *stem-leaves* 1 or 2, on the lower part of the stem, on leaf-stalks, pointed, toothed, reddish underneath. *Flowers* few, opening about 6 in the morning and closing about 2 in the afternoon. Linn. *Root-leaves* varying considerably in shape, mostly oval spear-shaped, narrowing towards the leaf-stalk, and with a few large teeth towards the base, very entire upwards, hairy on both sides, and especially the mid-rib and leaf-stalk; sometimes spotted with large reddish spots. *Stem* cylindrical, solid, firm, slightly scored, reddish towards the base, hairy, sometimes naked, or nearly so, sometimes cloathed with leaves, similar to but smaller than the root-leaves. *Flowers* in a branched panicle. *Floral-leaves* awl-shaped, 1 to each fruit-stalk. *Calyx*, scales strap-spear-shaped, the lower spreading. *Blos.* yellow. *Seeds* nearly cylindrical, furrowed, smooth, dark purple, as long as the down, which has rays as long as the calyx. Woodward. It varies in the root-leaves being sometimes nearly circular, and very slightly and sparingly toothed; sometimes oblong-egg-shaped, or egg-spear-shaped and the teeth large. Edge of the leaves hairy. Sometimes the stem bears only a single flower.

French Lungwort. Golden Lungwort, or *Hawkweed.* Woods, old walls, shady banks, and balks of cornfields. [Bolton Abbey, Craven, Yorkshire. Castle Dinas Brân. Mr. Wood.—Arthur's Seat, Edinburgh. Sr.—Conzic Scar, near Kendal. Mr. Woodward.] P. July.

H. Stem branched, leafy: root-leaves egg-shaped, acute, on leaf-stalks: stem-leaves sitting: fruit-stalks many-flowered. Gouan. **sylvat'icum.**

Allioni 28. 1–*Lob. obs.* 517. 2, *and ic.* i. 587. 1–*Ger. em.* 304. 2–*Park.* 801. 2–*Tabern.* 505. 1–*J. B.* ii. 1034. 3.

Differs from the H. murorum, in the root-leaves being spear-shaped and slightly toothed, not egg-shaped, never approaching to wing-cleft at the base; the leaf-stalks being longer, the stem-leaves more than 1, and the whole plant considerably larger. *Flowers* yellow.

Hieracium murorum β. Linn. Huds. Bot arr. ed. ii. Old Roman Camp at Sidmonton, near Newberry. On the side of the Lake Lhyn y Cwin. Ray. [On Dudley Castle Hill.] P. Aug.

H. Stem branched: leaves rough with hair: root-leaves egg-shaped, toothed: stem-leaves heart-shaped, embracing the stem. **villo'sum.**

Jacq. austr. 87–*Clus.* 141–*J. B.* ii. 1027–*H. ox.* vii. 5. 58.

Stem scored, somewhat hairy; branches as high as the main stem. *Root-leaves* spear-shaped, broadish, somewhat hairy, teeth blunt. *Stem-leaves* heart-shaped, embracing the stem, approaching upwards at the base. *Fruit-stalks* 1-flowered. *Floral-leaves* rather distant from the calyx. *Cal.* but little tiled, expanding, leafits unequal in length, set with hairs black at the base, and with a yellow gland at the point, as have all the hairs. *Seeds* black. *Down* sitting, hair-like, in large quantity. Linn. *Root-leaves* very variable in size, the small ones on very long leaf-stalks. *Stem-leaves* sometimes strap-shaped, and not embracing the stem. The whole plant woolly, and when cultivated rising to the height of 4 feet. *Flowers* large, yellow.

Found by Mr. Dickson amongst wet rocks on Ben Nevis, Scotland. Linn. tr. ii. 286. [Clefts of rocks near Meer Gill, at the foot of Ingleborough, Yorkshire. Mr. Caley.] P. Aug.

H. Leaves soft, spear-shaped, nearly entire; lower ones on leaf-stalks: flowers on fruit-stalks nearly forming a corymbus. **mol'le.**

Dicks. h. s.–Jacq. austr. 119.

Stem upright, unbranched, 1 or 2 feet high, scored, purplish,

leafy, somewhat hairy. *Fruit-st.* terminating, few, 1 or 2-flowered, $1\frac{1}{2}$ inch long. *Leaves* oval, blunt, hairy on both sides, soft, the upper sitting, the lower tapering into leaf-stalks. *Calyx* not tiled; leafits dark green, hairy, uniform. *Flowers* deep yellow. *Seeds* reddish, scored. It approaches to the H. murorum, and sometimes grows along with it, but it differs in the colour of the flowers, the number of leaves on the stem, and is truly distinct. JACQUIN.

Found by Mr. Dickson in the south of Scotland. Linn. tr. ii. 286. B. July, Aug.

umbella'tum. H. Leaves strap-shaped, somewhat toothed, scattered: flowers in a sort of umbel.

Curt.–Kniph. 9–*Pet.* 13. 10 *and* 11–*Clus.* ii. 140–*Dod.* 638. 2–*Lob. obs.* 120. 3, *and ic.* i. 240. 1–*Ger. em.* 298. 5–*Park.* 801. 4–*J. B.* ii. 1030. 1–*Fl. dan.* 680–*Ger.* 234. 6.

Leaves spear-strap-shaped, obscurely toothed. *Flowers* terminating. *Calyx* the outer segments with their points turned back. LINN. *Stem* 2 to 4 feet high, simple, cylindrical, scored, hollow, nearly smooth. *Leaves* numerous, without order, decreasing in size upwards, sitting, strap-spear-shaped, with a few pointed teeth towards the base, edges and ribs slightly hairy. *Flowers* large, yellow. *Fruit-stalks* branched, cottony. *Floral-leaves* awl-shaped. *Cal.* scales strap-spear-shaped, the outer somewhat cottony, the inner smooth. *Seeds* cylindrical, smooth, furrowed. *Down* as long as the calyx. Mr. WOODW.

Bushy Hawkweed. Hedges and dry shady places. [Ditchingham, Norfolk. Mr. WOODWARD. Ditch banks near Birmingham, ST.]

Var. 2. Leaves, smooth, very entire, dark green. DILL. in *R. Syn.* truly strap-shaped. ST.

Pet. 13. 12.

About London, but not common. [Near Bungay, Suffolk, common. Mr. WOODWARD.] July, Aug.

CRE'PIS. *Recept.* naked: *calyx* double, the outer one deciduous: *down* hair-like, sometimes standing on a pedicle.

foe'tida. C. Leaves between notched and winged, rough with hair: leaf-stalks toothed.

E. bot. 406–*Col. ecphr.* 242–*Park.* 794. 3–*Dod.* 641. 3–*Lob. obs.* 1[illegible]. 1, *and ic.* i. 226. 1–*Ger. em.* 279–*H. ox.* vii. 44–*Pet.* 12. 8 *and* 9–*Magn. bot.* 129.

Unopened *flowers* nodding. *Leaves* smelling like bitter almonds. LINN. rather like opium. RELHAN. *Calyx* whitish. *Down* longer than the calyx; on a pedicle. *Receptacle* somewhat hairy. LEERS. *Flowers* small, yellow.

Stinking Hawksbeard. Dry meadows and pastures. About Cambridge. Banstead Downs, by the side of the road to Darking, Surry. Northfleet chalk pits, Kent. Near Greenhithe. [Barton, near Swaffham, Norfolk. Mr. PITCHFORD.]

B. June, July.

C. Leaves spear-shaped, notched; sitting, smooth; the tecto'rum. lower ones toothed.

Curt. 327–*Walc.*–*Fl. dan.* 501–*Pet.* 12. 6–*Gmel.* ii. 6–*Lob. ic.* i. 239–*Ger. em.* 297. 4–*Park.* 794. 2.–*H. ox.* vii. 7. 29–*J. B.* ii. 1024. 1–*Dod.* 636. 3–*Lob. obs.* 115. 1, *and ic.* i. 229. 2–*Ger. em.* 284. 2–*Park.* 777. 2–*J. B.* ii. 1024. 2–*Ger.* 228. 2.

Plant of an ash-coloured green. *Stem* angular, furrowed. *Branches* as long as the stem. *Root-leaves* those of *Leontodon Taraxacum*; *stem-leaves* those of *L. autumnale*, but with the teeth at the base upright and longer; *branch-leaves* entire, strap-shaped, somewhat arrow-shaped and rolled back at the edge. *Flowers* of the appearance of those of the *Lapsana Communis*, never nodding. *Cal.* furrowed, sprinkled longitudinally with clammy hairs. *Styles* as soon as they have passed through the anthers, brown, a singular circumstance. The plant, in most other respects, liable to great variations, in point both of structure and appearance, when growing in a rich soil appearing as figured in *Ger.* 228. 2; when in a poor soil it is slender, about a foot high, with strap-shaped leaves somewhat toothed, resembling those of *Plantago Coronopus*, [as in *Gmel.* ii. 6. ST.] or a hand's breadth high, with leaves jagged like those of *Leontodon Taraxacum*. LINN. *Root* very long and taper. *Stems* scored, purplish, often twisted, smooth. *Leaves* strap-shaped; *stem-leaves* with winged clefts embracing the stem. *Cal.* with black or brownish white hairs, terminating in small transparent globules; *outer* leaves 5 to 10, not deciduous; *inner* keeled towards the bottom. *Florets* yellow on both sides. *Down* sitting, rather longer than the seeds, and longer than the tube of the blossom.

Smooth Succory Hawkweed, or Hawksbeard. Meadows, pastures, walls, roofs, road sides. A. June—Sept.

Var. 2. Leaves tapering to a fine point.

Pet. 12. 7.

Pastures about London. July, Aug.

Var. 3. Leaves entire, toothed, either spear-shaped or egg-shaped.

Pet. 12. 5.

Pastures about London.

Sometimes the leaves are very entire, scarcely producing a single tooth.

Var. 4. Stems trailing, leaves strap-shaped, very narrow, apparently from the stem having been bitten off in the spring.

bien'nis. C. Leaves notched, with winged clefts, rough, toothed above the base: calyx bristly.

E. bot. 149–*Kniph.* 6–*J. B.* ii. 1025. 3–*C. B. pr.* 64–*Park.* 793–*H. ox.* vii. 4. 46–*Pet.* 12. 10.

Stem angular, rough, 4 to 6 feet high, brittle. *Leaves*, all between lyre-shaped and winged, bristly underneath. *Calyx* furrowed, beset lengthwise with soft prickles. *Flowers* closing between 3 and 4 in the afternoon. Linn. *Calyx* scales sometimes slightly cottony with only here and there a scattered, short, bristly hair. Sr. *Leaves* at the base of the lowermost flowering branches similar to the leaves below, those at the base of the upper flowering branches strap-spear-shaped. *Flowering branches* spreading, with several flowers. *Flowers* on separate fruit-stalks. *Floral-leaves* spear-shaped. *Bloss.* yellow. *Seeds* furrowed. *Down* sitting; hair-like, extending a little beyond the calyx. Woodw. Lower leaves in the larger plants widely notched; the notches hollowed out like the teeth of a large timber saw, or the leaves of the common Dandelion.

Rough Succory Hawkweed, or *Hawksbeard.* Meadows and pastures in a calcareous soil. Road from Sittingburn to Rochester, and about Northfleet and other places in Kent.

B. July, Aug.

HYO'SERIS. *Recept.* naked: *calyx* nearly equal: *down* sitting, like awned chaff, surrounded with hairs, or instead thereof a minute calyx including a very fine down.

min'ima. H. Stem divided, naked: fruit-stalks thickening upwards.

E. bot. 93–*Fl. dan.* 201–*Clus.* ii. 142. 2–*Ger. em.* 288. 8–*Park.* 791. 9–*Pet.* 15. 9–*Gies.* 33–*Ger.* 227. 8–*H. ox.* vii. 1. 8.

Root small, woody, with a few stiff fibres. *Leaves* spreading in a circle, bluntly oval, tapering into a leaf-stalk, toothed on the sides, entire at the base and end, viewed with a glass slightly hairy, particularly at the edges. *Stalk* 6 to 9 inches high, cylindrical, smooth, reddish and stiff at the bottom, green

and hollow upwards, sometimes simple, oftener with 1, and sometimes 2 branches. *Branches* reddish, and wire-like at the base, hollow and thickening upwards, sometimes again branched. *Flowers* nodding before they open, afterwards upright. *Cal. outer scales* small, dry, and shrivelling; the *inner* very pointed. *Bloss.* yellow. *Seeds* oval, scored, crowned with the proper calyx. WOODWARD. In some situations much larger, the branches dividing and subdividing. Mr. BROWN.

Small Swine's Succory. Small Swines-eye. Meadows and cornfields in gravelly soil. Common Cornfield, Walthamstow, Essex. Teddington Field, near Hampton. Pensham Field, near Pershore, Worcestershire, in the most barren and gravelly places. NASH.—[Cornfields near Norwich. Messrs. PITCHFORD and WOODWARD. Sandy cornfields about Forfar. Road from Dundee to St. Andrews. Mr. BROWN.] A. May, Aug.

HYPOCHÆ'RIS. *Recept.* chaffy: calyx somewhat tiled: *down* on a pedicle: feathered.

H. maculata. Stem almost bare, with a solitary branch: leaves egg-oblong, entire, toothed.

E. bot. 225–*Fl. dan.* 149–*Hall. enum.* 24. 1. *at p.* 740, *and hist.* 1. 1. *at p.* 24–*Clus.* ii. 139. 2–*Ger* 301. 1–*Park.* 799. 13–*J. B.* ii. 1027. 1–*H. ox.* vii. 5. 53–*Pet.* 13. 1–*Ger.* 237. 1–*Hall.* 1. 1. *at p.* 24.

Seeds wrinkled. LINN. *Leaves* spreading on the ground in a circle, oval, toothed at the base, very entire towards the end, fringed, with reddish angular spots, and scattered hairs. *Stem* naked, with 1 or 2 strap-shaped scales. *Cal.* outer scales blackish, fringed; the inner smooth, yellowish, half as long as the florets, hairy, composed of large scales. WOODWARD. *Stalk* generally simple, but sometimes with 1, 2, or 3 branches. RELH. *Blossoms* yellow; opening at 6 in the morning and closing at 4 in the afternoon.

Spotted Cats-ears. Mountainous meadows and pastures. Gogmagog Hills, between Triplow Heath and Foulmire, Newmarket Heath, banks of the Devil's Ditch near Reche, and Bartlow, Cambridgeshire. Bernuk Heath, Northamptonshire. [On Omperhead, by Cartmel Wells, very plentiful, along with Veronica hybrida. Mr. HALL. Near Ottermine Cove, Settle, Yorkshire. Mr. CALEY.] P. July.*

* The leaves are boiled and eaten like cabbage. Horses are fond of this plant when green, but they do not like it when dry. Cows, goats, and swine eat it. Sheep are not fond of it. LINN. The country people believe it a cure for tetters, and other cutaneous eruptions, possibly through a vulgar prejudice, founded on its spotted leaves. Mr. Wood.

gla'bra. H. Smooth: stem branched, leafless: leaves toothed and indented: calyx oblong, tiled.

Curt. 145–*E. bot.* 57?–*Fl. dan.* 424–*Pet.* 12. 4–*H. ox.* vii. 4. 35–*Pet.* 11. 12–*Col. ecphr.* ii. 27. 2.

Differs from H. *radicata* in having minute *blossoms*, and the scales of the calyx being smooth, and the keel not fringed. Whole *plant* smooth. *Stems* nearly upright, with 1 or 2 branches, slender, hollow above, solid below. *Leaves* spear-shaped, indented, toothed. *Fruit-stalks* thickening upwards. *Cal.* like that of *Leontodon autumnale*. *Bloss.* yellow, close. *Seeds* of the circumference with the down sitting; those of the centre, down on a pedicle. *Habit* and appearance that of *Leontodon autumnale*. Linn. *Stem* sometimes simple, in the autumn much branched and reclining. *Leaves* in a circle round the root, shining; teeth triangular. Woodw. *Leaves* sometimes edged with white hairs. *Calyx* long, conical; scales smooth, blunt, purplish at the ends.

Smooth Cats-ears. Sandy and gravelly soils. Near Middleton, Warwickshire. Norwich, and about Comb and Kingston, Surry. Pensham Field, near Pershore, Worcestershire. Nash. [On the common close to the inn at Banktop, near Barnesley, Yorkshire. Mr. Wood. Sandy parts of Norfolk and Suffolk. Mr. Woodw. Washwood Heath, near Birmingham.] A. June—Aug.

radica'ta. H. Stem branched, naked, even: leaves notched, blunt, rough: fruit-stalks scaly.

Curt. 152–*E. bot.* 831–*Fl. dan.* 150–*Dod.* 639. 2–*Lob. obs.* 120. 2, *and ic.* i. 238. 1–*Ger. em.* 298. 6–*Park.* 790–*H. ox.* vii. 4. 27–*Ger.* 227. 7–*Park.* 791. 8–*Pet.* 11. 11–*J. B.* ii. 1032. 1.

Fruit-stalks thickening upwards. *Calyx*, keel of the scales fringed. *Bloss.* large, closing at 3 in the afternoon. Linn. *Root-leaves* spread on the ground, oblong-wedge-shaped, waved or toothed, hairy. *Stem* smooth, naked. *Branches* 1 or more, thickest under the flower, each with 1 flower. Woodw. *Scales* spear-shaped, 1 at the base of each branch, with a few white bristly teeth at the base on each side. *Cal.* not distended at the base; scales strap-spear-shaped, set along the upper part of the keel with a row of short, taper, dark, purple bristles. *Seeds* scored, rough; *pedicle* longer than the seed; *down* rather longer than the pedicle. *Chaff* strap-shaped, tapering and yellow towards the top. *Blossoms* yellow within, reddish green without.

Long-rooted Hawkweed, or *Cats-ear*. Meadows and pastures, common. P. May—Sept.

Var. 2. *Smaller*, Stem 5 or 6 inches high, simple, or with 1 flower, nearly sitting, on the side. Woodward.

LAP'SANA. *Recept.* naked : *calyx* double ; all the inner scales channeled.

L. Calyxes after flowering, angular: fruit-stalks slender, very much branched. commu'nis.

Dicks. h. s.–Curt.–E. bot. 844–*Kniph.* 5–*Fl. dan.* 500–*Lob. obs.* 104. 1, *and ic.* i. 207. 1–*Ger. em.* 255–*Park.* 810. 1–*J. B.* ii. 1028–*Dod.* 675. 2–*H. ox.* vii. 1. 9–*Pet.* 14. 12–*Ger.* 231. 8.

Seeds all naked, none involved in the scales of the calyx. LINN. *Stem* 2 to 4 feet high, stiff, hollow, cylindrical, scored, hairy. *Leaves* alternate; the *lower* egg-shaped, on leaf-stalks ; the *upper* spear-shaped, higher up strap-shaped, the uppermost awl-shaped. *Leaf-stalks* bordered, the border wing-cleft, and 1 or 2 pair of wings, slightly hairy. *Flowering branches* long, naked, or with 1 or 2 awl-shaped scales, much branched at the top, each branch with 1 flower. WOODWARD. *Stem* nearly cylindrical, scored, hairy ; the hairs terminated by minute globules. *Branches* smooth. *Leaves* toothed, rough with hair, the lower egg-shaped, on long leaf-stalks, the upper spear-shaped, sitting. *Leaf-stalks* flat, with 2 or 3 pair of small unequal wings. *Cal.* rather cylindrical ; the *outer*, scales spear-shaped, closely embracing the base of the inner. *Bloss.* yellow ; *florets* 15 to 18. *Styles* purplish. *Summit* dark purplish green.

Common Nipplewort. Dock Cresses. Hedges, shady places, and on rubbish. A. June, July.*

CICHO'RIUM. *Recept.* somewhat chaffy ; *calyx* double : *down* about 5 teeth, indistinctly hairy.

C. Flowers in pairs, sitting : leaves notched. In'tybus.

E. bot. 539–*Fl. dan.* 907–*Woodv.* 248–*Curt.* 241–*Blackw.* 177–*Walc.*–*Dod.* 635–*Lob. obs.* 114. 1, *and ic.* i. 228. 2–*Ger. em.* 284. 1–*Park.* 776, 2–*H. ox.* vii. 1. *row* 2. 2 –*Fuchs.* 679–*J. B.* ii. 1008–*Trag.* 272–*Lonic.* i. 94. 1– *Ger.* 235. 10–*Matth.* 503.

Flowers open at 8, and close at 4. LINN. *Stem* angular. *Stem-leaves* spear-shaped, embracing the stem, toothed towards the base, fringed with bristly hairs terminating in globules. *Flowers* in the bosom of the upper leaves. *Cal. outer*, scales 6, bent back, about half as long as those of the inner, set on the

* As a curative for sore breasts (from whence the old English name is derived,) it is now entirely in disuse. At Constantinople it is eaten raw, just before it comes into flower.

outside and edges with whitish hairs terminated by small globules; *inner*, scales skinny, set along the back with similar hairs, woolly at the ends. *Bloss.* of a fine blue; *individuals* with 5 or 6 semi-transparent lines, a little woolly on the outside. Cylinder of anthers striped blue and white. *Germen* edged with little teeth. *Summits* blue. *Seeds* oblong, with 4 corners, crowned with a small greenish cup edged with numerous white skinny teeth. *Chaff* short, spear-shaped.

Wild Succory, or *Cicory*, or *Endive*. Borders of cornfields. [Tamworth Castle.] B. July, Aug.*

ARCTIUM. *Calyx* globular: scales with hooked points, bent inwards.

Lap'pa. A. Leaves heart-shaped, without thorns, on leaf-stalks.

Kniph. 3–*Ludw.* 106–*Curt.* 238–*Woodv.* 15–*Matth.* 1154. –*Lob. obs.* 318. 2, *and ic.* i. 588. 1–*Ger.* 664. 1–*Park.* 1223. 1–*Dod.* 38–*Lob. obs.* 318. 1, *and ic.* i. 587. 2–*Ger. em.* 809. 1–*Pet.* 23. 1–*Fuchs.* 72–*J. B.* iii. 570–*Trag.* 837–*Blackw.* 117. 1–*H. ox.* vii. 32. 1–*Lonic.* i. 64. 2.

Heads with a very slight woolliness, not so broad as those of var. 2, nor so round as the varieties with woolly heads. The most common of all. Ray. *Leaves.* the lower on long leaf-stalks, waved at the edges; the upper egg-spear-shaped. Mr. Woodw. *Stems* reddish. *Stems* and *leaves* with short white soft bristles. *Fruit-stalks* from the bosom of the leaves. *Cal. scales* green and fleshy at the base, purple towards the top, keeled, ending in long stiff awns, yellow at the hooked ends. *Bloss.* tube white; border red. *Anthers* bluish purple. *Style* white. *Summits* expanding, white. *Seeds* oblong, angular, somewhat flatted.

Burdock. Common Burr. Clott-burr. Hurr-burr. Road sides, rubbish, and ditch banks. B. July—Aug.

Var. 2. Heads roundish, rather larger, brownish purple, covered with a whitish cotton. Bloss. purple. Stem dark red. Ray.

Mill. ic. 159–*Blackw.* 117. 2–*Fl. dan.* 642–*Pet.* 23. 5–*Matth.* 11. 155–*H. ox.* vii. 32. 2.

Road sides and rubbish.

Var. 3. Heads quite smooth, very large, an inch in diameter, green. Bloss. purplish.

* The leaves, when blanched, are eaten early in the spring in sallads. They lose their bitterness by cultivation. The roots, gathered before the stem shoots up, are eatable, and, when dried, will make bread. Sheep, goats, and swine eat it. Cows and horses refuse it.

New Cross, Kent. Ray.

Var. 4. Heads small, smooth, of the size of a hazel nut, broadish at the base, brown. Bloss. purple. Ray.

Pet. 23. 3.

Var. 5. Heads the size and colour of those of var. 4, rounder, brown or purplish, and with a considerable quantity of cotton. Ray.

Pet. 23. 4–*J. B.* iii. 571. 1.

Near Halifax, Yorkshire. Ray.

Var. 6. With leafy heads. Pluk.

Pet. 23. 2.

About London. Aug. Pet. Dill.*

SERRA'TULA. *Calyx* nearly cylindrical, tiled: scales not awned.

S. Leaves lyre-shaped and wing-cleft: the terminating tincto'ria. segment very large: florets all alike.

Fl. dan. 281–*E. bot.* 38–*Ger.* 577. 3–*Matth.* 945. 1–*Clus.* ii. 8. 1–*Dod.* 42. 3–*Lob. obs.* 288. 2, *and ic.* i. 534–*Ger. em.* 713. 1–*Pet.* 22. 6–*J. B.* iii. 23. 2–*Park.* 475. *a.*

Leaves fringed. *Receptacle* bristly. Linn. *Stem* 2 to 3 feet high, firm, 4-cornered, scored, smooth. *Leaves* sometimes entire, mostly wing-cleft, alternate, half embracing the stem; wings spear-shaped, sharply serrated, or rather toothed, woolly above, and at the edges and veins underneath. *Flowers* single or in clusters, terminating or on the branches. *Cal.* scales numerous, slightly cottony at the edges, the upper rather longer. *Bloss.* purple. *Down* yellowish, shining, hairy. Woodward.

Common Saw-wort. Woods; pastures. P. July.

Var. 2. Blossoms white.

[Alconbury, five miles from Huntingdon, on the north road. Mr. Woodward.]

Var. 3. All the leaves entire. Mr. Wood.

* Before the flowers appear, the stems, stripped of their rind, are boiled and eat like asparagus. When raw they are good with oil and vinegar.—A decoction of the roots is esteemed by some very sensible physicians, as equal, if not superior to that of sarsaparilla.—Boys catch bats, by throwing the prickly heads up into the air.—Cows and goats eat it. Sheep and horses refuse it. Swine are not fond of it.

The *Phalæna Humuli* feeds upon the roots, and the Mottled Orange Moth upon the stems. Linn.—A horse eat the leaves, and has been observed to eat the heads. Stokes.

Kniph. 2–*Ger.* 576. 1–*Matth.* 945. 2–*Clus.* ii. 8. 1–*Dod.* 42. 3–*Lob. obs.* 288. 2, *and ic.* i. 534. 1–*Ger. em.* 713. 1–*Pet.* 22. 5–*Park.* 475.

Var. 4. Lower leaves entire, the upper part cut. HALL.

Ger. 576. 2.

Var. 5. All the leaves jagged, HALL; wing-cleft, without the large terminating segment. Wings spear-shaped, serrated.*

Zanon. 94.

alpi'na. S. Calyxes somewhat hairy, egg-shaped: leaves undivided.

E. bot. 599–*Lightf.* 19, *at p.* 449–*Pluk.* 154. 3–*Gmel.* ii. 26.

Root-leaves egg-spear-shaped, serrated, the serratures not ending in bristles but expanding, smooth above, woolly and whitish underneath. *Stem-leaves* 7 to 10, spear-shaped, very entire, nearly sitting. *Stem* undivided, a span high. *Flowers* 5 to 12, in a broad-topped spike terminating the stem. *Cal.* oblong, nearly cylindrical. LINN. About 5 inches high. *Stem* cottony. *Leaves* 6 or 7; cottony underneath. *Flowers* about 6; terminating, blue. *Down* stiff and strong; feathered.

Mountain Saw-wort. On the highest rock of Snowdon, and on Brearcliff, near Brunley, Lancashire. MERRET. Sides of the Highland Mountains, and near Moffat, in Anandale. LIGHTF. [On the highest rocks of Caernarvonshire, as Clogwyn y Garnedd. On Crib y Ddeseil, in places scarcely accessible. Mr. GRIFFITH.] P. Aug. Sept.

Var. 2. *cynoglossifolia.* Leaves spear-shaped, narrow. HALL. LIGHTF.

Fl. dan. 37–*Dill. elth.* 76–*Gmel.* ii. 32.

Near a rivulet on the rock Rhiw'r Glyder above the lake Lhyn y Cwn near Llanberys, Caernarvonshire. RAY.

arven'sis. S. Leaves toothed, thorny.

Kniph. 6–*Fl. dan.* 644–*Col. ecphr.* i. 46–*Ger. em.* 1173. 4–*Park.* 959. 7–*H. ox.* vii. 32. 14–*Pet.* 21. 5–*J. B.* iii. *a.* 59. 2.

It has the habit of a *Carduus*, LINN. Add to which, that the down of the seed is very long. Mr. WOODWARD: and hair-like. *Bloss.* pale purple.

* This plant is very much used by the dyers to give a yellow colour; but is inferior to the Reseda, therefore its use is confined to the coarser woollen cloths.—Goats eat it. Horses not fond of it. Sheep, swine, and cows refuse it.

Carduus arvensis. CURT. cat. n. 533. *Corn Saw-wort. Way Thistle.* Cornfields and road sides. P. July.*

Var. 2. Leaves much less thorny, not so deeply indented. RAY.

Ger. 1011. 5.

Amongst the corn in Battersea Fields, over against Chelsea. RAY. [Found by Mr. Sole somewhere in Devonshire, and cultivated in both our gardens for some years past. Mr. BALLARD.]

CAR'DUUS. *Calyx* bellying, tiled; scales thorny: *receptacle* hairy.

(1) *Leaves decurrent.*

C. Leaves toothed, thorny at the edge: flowers in bunches, upright: fruit-stalks without thorns. palus'tris.

Gmel. ii. 23. 2–*H. ox.* vii. 32. 13–*Pet.* 21. 4.

Fruit-stalks without thorns. *Calyx* closely tiled, smooth, the points of the scales being hardly discernible. *Down* feathered. LINN. *Stem* 5 to 6 feet high and upwards, upper part and branches slender and with few leaves. *Calyx*, scales woolly, green, tipped with deep purple, without a rib along the back, ending in a short expanding thorn not pungent; inner pointed, without thorns. *Bloss.* segments even with the anthers, shorter than the pistil. *Down* shorter than the blossom; rays fringed with long hairs. WOODWARD. *Bloss.* purple; sometimes white.

Marshy meadows and moist shady places, [and wet clayey pastures. WOODWARD.] P. July.

Var. 2. *cristatus.* A monstrous variety, with a broad flat stem and head of flowers.

Stem $\frac{3}{4}$ of an inch broad. Cluster of flowers 2 inches and an half broad, the upper edge crowned with a continued line of florets, so as to give it the appearance of the Cockscomb Amaranthus of the gardens. ST.

It grew in the middle of a pasture. The root produced the same for 2 years together.†

C. Leaves indented, thorny at the edge: calyxes on fruit-stalks, solitary, upright, woolly. Acanthoi'des.

* It is said to yield a very pure vegetable alkaly when burnt. Goats eat it; neither cows, horses, sheep, or swine are fond of it. LINN. Horses sometimes eat the young tops. ST.

† This, and almost all the other species of this genus, may be eaten like the Burdock, before the flowers are formed. Swine eat it; horses are very fond of it; cows refuse it.

Curt.; *C. polyacanthos*–*Jacq. austr.* 249–*Lob. ic.* ii. 21–*Tabern.* 1080. 1–*Ger.* 1010. 1–*Ger. em.* 1173. 1–*J. B.* iii. 59–*H. ox.* vii. 30. 11–*Pet.* 21. 2.

Stem with white elevated long lines. *Leaves* halberd-winged, and sprinkled underneath with white upright hairs, as in C. *crispus*. *Fruit-stalks* with a leafy thorny border, in which it differs from C. *crispus*. *Flowers* smaller than those of C. *nutans*, larger than those of C. *crispus*. Differs from C. *nutans* in its calyx being upright, from C. *crispus* in its calyx being solitary and woolly. *Calyx* inner scales expanding. *Florets* cloven half way down, the lowermost segments separated nearly to the base, so as to give the floret the appearance of having 2 lips, an upper one 4-cleft, and a lower one undivided, which is not the case in C. *nutans* or C. *crispus*. *Styles* as long again as the florets. Linn. *Stem* solitary, 3 or 4 feet high; angular, the angles edged with a border running down from the leaves. Huds. *Stem* leafy, edged with a border set with numerous stiff yellow thorns of various lengths. *Leaves*, the *lower* wing-cleft; wings broad, blunt, somewhat 5-cornered, with 5 imperfect lobes, the terminating one very broad and blunt, cottony underneath, above smooth, excepting a few short hairs arising from glandular warts; ribs ending in sharp yellow thorns; *those above* pointed, wings triangular, confluent. *Flowers* sitting, crowded together, pointing upwards, sidewise, and downwards; sometimes in branched bunches, terminating the branches, on short fruit-stalks upright or open. *Calyx*, *scales* spear-shaped, yellowish green, the upper expanding, the innermost chaffy, all tipped with sharp thorns. *Bloss.* segments somewhat longer than the anthers, which are even with the pistil. *Down* nearly as long as the blossom, hair-like. Woodw. Scales of the calyx scarcely thorny, not close as in the C. *palustris*. Curt. *Flowers* purplish red, sometimes white.

Welted Thistle. *C. crispus*. Huds. *C. polyacanthos*. Curt. The C. *crispus* of Linnæus I believe has not been found with us.

Ditch banks, on rubbish, borders of cornfields. [Plentifully on banks and under walls near Yarmouth, and also in waste places far from the coast. I had it growing for some years without variation. Mr. Woodward. Road sides about London. Sr.] A. June—Sept.

tenuiflo'rus. C. Leaves thorny at the edge: branches straight, flowers in clusters, sitting: calyxes nearly cylindrical, scales upright but open; pungent.

Curt.–*E. bot.* 412–*J. B.* iii. 56. 1. *(not* 516 *as in Fl. Lond.)* –*Park.* 982. 5–*H. ox.* vii. 31. 13.

Stem and *branches* quite straight, cottony upwards; bordered, borders thorny. *Leaves* cottony underneath. *Calyxes* oblong-conical; scales upright, spreading at top, long, narrow, ending

in a yellow thorn as long as the florets. CURT. *Flowers* pale purplish red. *C. acanthoides.* Huds. There has been great confusion about this and the preceding species, chiefly caused by the synonyms given to the C. *acanthoides* in the Fl. suec. being misplaced, for, except the reference to *It. scan.* they really belong to this plant, reading *Bauh. hist.* iii. p. 56, instead of 59, and *Moris. hist.* iii. p. 153, instead of p. 15.

Slender-flowered Thistle. Hedges, ditch banks, and under walls; very common near London. P. July, Aug.

C. Leaves with winged clefts, hispid; segments straddling: calyxes egg-shaped, thorny, woolly: stem hairy. **lanceola'tus.**

E. bot. 107–*Fl. dan.* 1173–*Tabern.* 1078. 2–*Ger.* 1011. 6–*Ger. em.* 1174. 6–*Park.* 982. 9–*H. ox.* vii. 31. *row* 1. 7–*Pet.* 21. 7–*J. B.* iii. 58. 1.

Calyx innermost scales without thorns, bristle-shaped, dry, LINN. *Stem* angular, cottony, frequently purple. *Leaves* half embracing the stem, cottony and sea-green underneath, hairy and deep green above; wings spear-shaped, the terminating one long, the side ones mostly divided to the base into 2 segments, one pointing upwards, the other downwards, terminating, as do also the wings of the part running down the stem, in sharp stiff white thorns, which are extensions of the ribs. *Calyx* with numerous ranges of spear-shaped scales, somewhat cottony, ending in sharp stiff white thorns, the inner strap-shaped, pointed, not thorny. *Bloss.* purple. *Down* feathered, almost as long as the blossom. WOODWARD. It varies from 2 to 5 feet high, or more.

Spear Thistle. Rubbish, road sides, and other waste places. B. July, Aug.*

C. Leaves decurrent half way down towards the next below; thorny: fruit-stalks crooked: calyx, scales expanding upwards. **nu'tans.**

Fl. dan. 675–*H. ox.* vii. 31. *row* 1. 6–*Pet.* 21. 1–*J. B.* iii. 56. 3.

Fruit-stalks with 1 flower. *Flowers* sweet-scented in the night. *Styles* bent back towards the sides. LINN. *Stems* 2 to

* Few plants are more disregarded than this, and yet its use is very considerable. If a heap of clay is thrown up, nothing would grow upon it for several years, did not the seeds of this plant, wafted by wind, fix and vegetate thereon. Under the shelter of this other vegetables appear, and the whole soon becomes fertile. The flowers, like those of the Artichoke, have the property of curdling milk. Sheep and swine refuse it; neither horses, cows, or goats are fond of it. The *Papilio Cardui* and the Thistle Ermine Moth feed upon it. LINN.

3 feet high, scored, cottony. *Branches* alternate. *Fruit-stalks* terminating, cottony, particularly that which terminates the stem. *Leaves* with winged clefts ; wings egg-shaped, with strong thorns. *Cal.* scales spear-shaped, cottony, with the rib running along the back terminating in a thorn, the lowermost bent back, the inner without thorns. *Down* hair-like, nearly as long as the florets. Mr. Woodward. *Stem, leaves,* and *calyxes* overspread with a cobweb kind of woolliness. *Cal.* globular, flatted; scales very strong, horizontal when the flower is expanded, purplish towards the end, terminating in a strong yellow thorn. *Bloss.* tube whitish, border purple. *Filaments* woolly. *Pollen* grey, globular, set with fine points.

Musk Thistle. Pastures in a calcareous soil. [Road sides in a sandy or gravelly soil. Stokes. Marlborough Downs.]

A. June, July.

(2) *Leaves sitting.*

maria'nus. C. Leaves embracing the stem, halberd-shaped and wing-cleft; thorny : calyx without any leaves near it: thorns channeled, and set with other little thorns.

Kniph. 1–*Curt.* 148–*Blackw.* 79–*Ludw.* 35–*Fuchs.* 56–*J. B.* iii. *a.* 52. 2–*Trag* 850–*Lonic.* i. 70. 2–*Ger.* 989–*Pet.* 21. 9–*Dod.* 722. 1–*Lob. obs.* 479. 1, *and ic.* ii. 7. 2–*Ger. em.* 1150–*Park.* 976. 1–*H. ox.* vii. 30. *row* 2. 1. *f.* 4–*Matth.* 676.

The leaves are generally ornamented with broad and beautifully white veins, though they are sometimes entirely green. The large purple blossom and the strong thorns of the calyx, an inch or more in length, sufficiently distinguish this from our other species.

Milk Thistle. Ladies Thistle. Ditch banks and road sides, borders of cornfields, and on rubbish. A. Aug.*

erioph'orus. C. Leaves with winged clefts pointing 2 ways, every other segment upright : calyxes globular, woolly.

Jacq. austr. 171–*E. bot.* 386–*Clus.* ii. 154–*Dod.* 723–*Lob. obs.* 482. 1, *and ic.* ii. 9. 2–*Ger. em.* 1152–*J. B.* iii. *a.* 57–*Park.* 978–*Mill. ic.* 293.

Stem 2 feet high, branched, flowering the second year. *Cal.* as large as an egg; points of the scales strap-shaped, horizontal,

* This is eaten when young as a sallad. The young stalks peeled, and soaked in water to take off the bitterness, are excellent. The scales of the cup are as good as Artichokes. The root is good to eat early in the spring.

entire, with a cobweb-like wool interwoven. *Leaves*, every other segment pointing downwards. LINN. *Stem* 4 or 5 feet high, angular, scored, woolly, much branched. *Root-leaves*, 1 to 2 feet long, wings distant, with 2 lobes, unequal, the larger strap-shaped, the lesser spear-shaped, very entire, but fringed with a few fine thorns; mid-rib stiff, extending out into a sharp thorn; above green, with numerous short stiff hairs pressed closely; underneath with a thick, woolly, white down. *Stem-leaves* embracing the stem; lobes not so regular, all spear-shaped, the terminating one long. *Fruit-stalks* slender, extremely cottony. *Calyxes* clustered, terminating the stem and branches; scales strap-spear-shaped, terminated by a long softish thorn, covered and interwoven with a thick cottony wool. *Anthers* extending beyond the blossom. *Style* much longer than the anthers. *Summit* very slightly cloven. *Seeds* large, whitish, nearly oval, without ridges. *Down* feathered, shorter than the blossom. WOODWARD. *Cal.* scales ending in a yellow thorn. *Bloss.* purple, or white.

The large lobes of the leaves pointing alternately horizontally and downwards, distinguish this plant at first sight.

Woolly-headed Thistle. Friar's Crown. Both in flat and mountainous meadows and pastures. RAY. Bredon Hill, Worcestersh. NASH. [By the road side between Stamford and Grantham, plentifully. Dr. J. E. SMITH. About Ripton, Huntingdonshire. Mr. WOODW. Hillend Bank in Longdon Parish, Worcestersh. Mr. BALLARD. On the foot way between Clarkton Leap and Kemsay, Worcestershire. ST. Near Truro, Cornwall.] B. July.

C. Leaves spear-shaped, ragged and edged with unequal prickles; cottony underneath: stem cottony, generally with 1 flower and 2 leaves. *pratensis.*

E. bot. 177–*Pet.* 22. 1–*Clus.* ii. 148. 1–*Ger. em.* 1183. 1–*Lob. obs.* 314. 4, *and ic.* i. 583. 1–*Park.* 961. 3–*J. B.* iii. 45. 2.

Root fibrous and creeping. *Stem* 1½ to 2 feet high, soft, cobwebbed or cottony, cylindrical, generally unbranched and supporting a single flower, but sometimes a branch terminated by another flower rises from the bosom of the upper leaf. *Root-leaves* 4 or 5, oblong-spear-shaped, ragged at the edge, and fringed with softish prickles unequal in size, not forming regular teeth, as represented in most of the figures. *Stem-leaves* generally 2, sometimes only 1, half embracing the stem; the upper not prickly at the edge, but terminated by a long soft thorn. All the leaves green, and more or less hairy above, grey and cottony underneath. *Calyx*, scales thick and strong, cobwebbed or cottony at the edges, terminating in a soft thorn. *Blossom* red. *Anthers*

with 5 horny, yellow, spear-shaped points. *Summit* cylindrical, blunt, not notched at the end. *Down* feathered.

This plant was well known to Mr. Ray, nor was it unknown to Clusius, but there have been doubts to which of the Linnæan species it should be referred. If Linné was at all acquainted with it, it was probably this plant which he designed by his C. dissectus, the reference to Lobel agreeing with our plant. If this be the C. canus of Jacq. *austr.* t. 42, it is very ill done, but the root, the shape and colour of the calyx, as well as the number of leaves on the stem, render Jacquin's figure very unlike our plant.

Meadow Thistle. Single-headed Thistle. English soft or *gentle Thistle. Cirsium anglicum.* R. Syn. 193. C. *heterophylus.* Lightf. 450. Relh. 306. Moist meadows and pastures, not uncommon. [Near Heydon, Norfolk. BRYANT.—Swampy meadows near Robinson's End, Malvern Chace, Worcestershire. Mr. BALLARD.—Meadows between Pucklechurch and Mangots field, plentiful. Mr. SWAYNE.—Woods in the Isle of Wight.] P. May, June.

helenioides. C. Leaves embracing the stem, spear-shaped, toothed, fringed with small unequal thorns; stem without thorns.

E. bot. 675–*Hall.* 7. *at* i. *p.* 77–*Mill.* 91–*Clus.* ii. 148. 2–*Ger. em.* 1183. *fig.* 2*d*–*Park.* 961. 5–*J. B.* iii. 46. 2–*Pet.* 22. 2.

Differs from C. *heterophyllus*, which it very much resembles, in all the *leaves* being undivided, whitish, but not of a snowy whiteness underneath, the edge more unequally serrated and fringed; and the stem being twice as high; of the height of a man, more panicled, and beset with expanding hairs. LINN. *hort. ups.* *Root* hardly creeping. Stem furrowed, set with leaves all the way up. *Leaves* 40 to 50, half embracing the stem, toothed not jagged, fringed with soft thorns, the ears at the base round, bent back, and growing to the stem; *flower-leaves* awl-shaped. LINN.

Great English soft, or *Melancholy Thistle. Cirsium Britannicum Clusis repens.* Ray Syn. 193. Mr. Ray thought this plant specifically different from the preceding, and our later botanists have entertained the same opinion, but it is not equally agreed whether Linnæus intended the same plant by his C. helenioides. However this may be, the alpine plant we now speak of must not be confounded with the lowland meadow C. pratense, which it only resembles in its cottony leaves and single flowered stalk, but from which it differs in its great size, its thick hollow stalk, its stem being clothed with leaves, and its leaves being more re-

gularly serrated. *Flowers* large, purple. See Lightfoot's description taken from Linn. and Haller.

Mountainous pastures in Yorksh. Westmoreland, Cumberland and Wales. Coppice near Giggleswick, in Skirrith Wood, and in the pastures about Bordley, near Malham. Curt.—[Mill Gill near Ascrig in Wensleydale, and Skirrith Wood near Ingleton, Yorkshire. Mr. Wood.—Mulbarton, near Norwich. Mr. Crowe.—Between Shap and Orton, Westmorel. Woodw. —About Hamsterley and Witton, Durham. Mr. Robson.]

P. June, July.

Var. 2. *heterophyllus.* Leaves embracing the stem, spear-shaped, fringed, either entire or jagged: stem mostly supporting a single flower; calyx without thorns. Linn.

Stem somewhat branched, bearing from 1 to 6 flowers. Leaves white and cottony underneath; root-leaves toothed and wing-cleft; lower stem-leaves wing-cleft, middle ones toothed, upper entire. I have seen both varieties from the same root. Huds. Mr. Robson also thinks that this is merely a var. of the C. helenioides with divided root-leaves, which is frequently found in the mountainous parts of the counties of York and Durham, growing with that; and he moreover believes that both sorts of leaves sometimes spring from the same root. Mr. Griffith also confirms this opinion.

C. Stemless: calyx smooth. acaulis.

E. bot. 161–*Jacq. ic.* iii. 579–*Fl. dan.* 1114–*Clus.* ii. 156. 1–*Lob. obs.* 480. 3, *and ic.* ii. 5. 1–*Ger. em.* 1158–*Park.* 969. 4–*J. B.* iii. *a.* 63. 1–*H. ox.* vii. 32. 12–*Pet.* 21. 6 –*Barr.* 493–*Trag.* 852–*Lonic.* i. 68. 1.

A dwarf plant, but spreading to the breadth of a foot. Linn. *Root-leaves* spreading in a circle close to the ground; on leaf-stalks; wing-cleft; wings irregularly lobed, and waved, angular, thorny at the edge, green on both sides, hairy towards the base. *Flowering-heads* 1 or more, rarely sitting. *Fruit-stalks* 1 to 2 inches high, hairy. *Cal. lower* scales short, oval-spear-shaped, *upper* spear-shaped, stiff, without thorns. *Blossom* even with the anthers. *Style* longer. *Summit* deeply cloven. *Seed* very small. *Down* long, feathered. Woodward. *Blos.* purple. Mr. Relhan informs me that he once found a plant on Gogmagog hills with a stem 5 inches high, bearing 3 flowers, and a leaf similar to the root-leaves under each flower. An appearance which it generally assumes when cultivated in a garden.

Dwarf Thistle. Mountainous and rocky dry pastures, especially in a calcareous soil. Blackheath, near London. [Dry heaths and commons in Norfolk, very frequent. Dr. J. E. Smith.

Mr. Woodw.—Dry heaths on the western side of the county of Durham. Mr. Robson.] P. July.*

ONOPOR'DON. *Recept.* like a honeycomb: calyx bellying: scales sharp-pointed.

Acan'thium. O. Calyx scales expanding, their points standing out: leaves egg-oblong, indented.

Curt. 334–*Fl. dan.* 909–*Fuchs.* 57–*J. B.* iii. *a.* 54. 2–*Trag.* 858–*Dod.* 721. 2–*Ger. em.* 1174. 5–*Park.* 979. 1–*Pet.* 21. 10–*Lonic.* i. 71. 2–*Ger.* 988. 1 *and* 2–*Dod.* 721. 1–*Lob. obs.* 476. 1, *and ic.* i. 1. 1–*Ger. em.* 1149. 1–*H. ox.* vii. 30. *row* 2. 1–*Matth.* 671–*Lonic.* i. 70. 3–*H. ox.* vii. 30. *row* 1. 1.

Plant of a hoary green. *Stem* with a straight leafy border running up to the calyx. *Cal.* scales expanding, awl-shaped. *Bloss.* sometimes white. Linn. *Plant* generally covered with a white cotton, giving it a whitish green colour. *Leaves* oval-spear-shaped: the lower extremely large, with deep triangular teeth, which are again toothed, and each tooth terminated by a sharp whitish thorn, being productions of the ribs; the upper spear-shaped with a few distant teeth. *Stem* leafy border irregularly toothed, and thorny, the thorns proceeding through and strengthening the border. *Heads* single, upright, terminating. *Cal.* scales ending in sharp thorns. Woodward.

Common Argentine. Cotton Thistle. On rubbish and road sides. [Road from Worcester to Droitwich, near Henlip. Mr. Baker.] B. July.†

CARLI'NA. *Calyx* radiated; the scales next the blossoms long, coloured.

vulga'ris. C. Stem with many flowers in a corymbus: flowers terminating: rays of the calyx yellow white.

Fl. dan. 1174–*Matth.* 669–*Clus.* ii. 156. 2–*Dod.* 739. 2–*Lob. obs.* 489. 1, *and ic.* ii. 20. 2–*Ger. em.* 1159. 1–*Park.* 981–*Fuchs.* 121–*J. B.* iii. *a.* 81. 2–*Trag.* 859–*Dod.* 728. 1–*Lonic.* i. 68. 2–*Ger.* 997. 1.

* Cows refuse it. It kills all plants which grow beneath it, whence it is very injurious in meadows. Linn. The different species afford nourishment to the *Cassida viridis* and *nebulosa*: *Papilio Cardui*; *Cicada cornuta*; *Cimex Cardui*; *Musca solstitialis*; and *Aphis Cardui*.

† The Receptacle, and the young stems, may be boiled and eaten like Artichoke.—The ancients thought this plant a specific in cancerous cases.—Cows, sheep, and horses refuse it.

It continues, after it is dead, unchanged even for the whole of the second year, a mournful spectacle! LINN. *Root* long, spindle-shaped, with a few stiff fibres. *Stem* 12 to 15 inches high, swelling just above the root, cylindrical, ribbed, purple, slightly downy, dividing above like an umbel. *Leaves* very numerous, clothing the whole stem and decreasing in size upwards, the lower sitting, the upper embracing the stem, deeply toothed, the teeth armed with numerous yellow thorns; those at the base of each branch, larger than the upper stem-leaves; those of the branches smaller than the stem-leaves, the uppermost join and form the lower ones of the calyx. *Cal.* scales purplish, edged and terminated with branching yellow thorns; the innermost strap-shaped, pointed at the end, dry, fringed with long hairs towards the base, straw-coloured within, without reddish brown totowards the base, but straw-coloured at the point. *Bloss.* segments spear-shaped, purple, straw-coloured below. *Seed* woolly; *down* sitting, rays 9 to 12, generally 11, either single, or with 2 or 3 clefts, fringed with long hairs. *Recept.* the chaff longer than the florets. WOODWARD. *Bloss.* tube white, border in the outer florets purple, in the inner whitish. *Down* pale brown, thrice as long as the seed; rays nearly equal, awl-shaped at the base, a little above it generally dividing into 3 and sometimes 4 bristle-shaped branches. The structure of the down and chaff indicates the clearest proofs of a natural generic difference. STOKES.

Wild Carline Thistle. Dry meadows and pastures. B. June.*

BI'DENS. *Recept.* chaffy: *down* rough with straight awns: *calyx* tiled.

B. Leaves spear-shaped, embracing the stem: flowers on cer'nua. crooked fruit-stalks: seeds upright.

Curt. 192–*Fl. dan.* 841–*J. B.* ii. 1074–*Ger.* 574–*Pet.* 20. 6–*Lob. adv.* 227, *and ic.* i. 529.

Leaves with distant serratures. *Flower-leaves* very entire. *Seeds* with 4 awns, 2 of which are larger. WOODWARD. *Stem* a little hairy. *Leaves* opposite. *Cal.* segments egg-spear-shaped, with black lines. *Blossom* and *summits* yellow. *Anthers* brown. *Germen* pyramidal, with 4 corners; awns 4, with prickles pointing downwards.

Nodding Double Tooth. Water Hemp Agrimony. Wet ditches, marshy places. A. July, Aug.

* The flowers expand in dry, and close in moist weather. They retain this property a long time, and therefore are employed as hygrometers. —It is said to be an excellent remedy in hysterical cases. *Amæn. Acad* III. p. 64. Goats eat it. Cows refuse it. LINN. Its presence indicates a very barren soil. MR. WOODWARD.

Var. 2. Flowers with radiated florets in the circumference.

Fl. dan. 841–*Barr.* 1209–*H. ox.* vi. 5. 22.

If it should be proved by observation to be a *Bidens*, let it be referred to that genus, if it be constant, to remain as a species of *Coreopsis*. Linn. Frequently on the same plant with 1. Woodw. as in the lower part of the figure in the Flora Danica.

Coreopsis Bidens. Linn. In England, and very frequent in Ireland. R. Syn. 187. n. 2. About Tarporley and other places in Cheshire. Huds. [Norfolk, but not common. At Ditchingham. Mr. Woodward.]

Var. 3. *Dwarf.*

Fl. dan. 312, *(the left hand figure and the dissected floret.)*

Ray 7. 2.

Seems to differ in no other respect than in its dwarfish growth, and wanting the serratures on the leaves, which probably would appear if the plant acquired a more expanded growth in a moister atmosphere. Var. 2 is probably only an unusual degree of expansion from a very moist atmosphere.

B. minima. Linn. In the fish pond on the moor near Somerset Bridge, Surry. Dill. in R. Syn. [In a splashy rivulet at the bottom of Tittensor common, Staffordshire; and also near Birmingham. St.] A. [Oct. St.]

triparti'ta. B. Leaves 3-cleft: seeds upright.

Curt. 237–*Blackw.* 519–*Pet.* 20. 7–*Dod.* 595. 1–*Ger. em.* 711. 1–*Park.* 595. 7–*H. ox.* vi. 5. 20.

Leaves, segments deeply serrated, the middle one much the largest. *Calyx* scales oval, fringed with hairs, the inner smooth, with yellow membranaceous edges. *Seeds*, awns sometimes 3. Mr. Woodward. *Flowers* terminating, yellow.

Trifid Double-tooth. Water Hemp. Water Agrimony. Marshy and watery places. A. July, Aug.

Var. 2. *Dwarf.*

Fl. dan. 312, *(right hand figure.)*

Only a starved plant, but its upright flower and the incipient divisions on the leaves sufficiently shew to which species it belongs.

EUPATO'RIUM. *Recept.* naked: *down* feathered: *calyx* oblong, tiled: *style* long, cloven half way down.

cannab'inum. E. Calyx 5-flowered: leaves with finger-like divisions.

E. bot. 428–*Fl. dan.* 745–*Blackw.* 110–*Fuchs.* 265–*J. B.* ii. 1065. 2–*Trag.* 491–*Lonic.* i. 241. 2–*Matth.* 1015–

Dod. 28. 2–*Lob. obs.* 285. 1, *and ic.* i. 528. 2–*Ger. em.* 453. 2–*H. ox.* vii. 13. 1–*Park.* 595.

Stem 3 or 4 feet high, branched. *Leafits* mostly 3, sometimes 5, spear-shaped, sharply serrated at the base, and towards the point very entire. *Cal.* scales few, strap-shaped. Seeds black, scored, smooth, little more than a line long. *Down* sitting, hair-like, when viewed with a glass finely toothed, not 3 lines long. Mr. Woodw. *Stem* reddish, rather cylindrical, slightly woolly. *Leaves* serrated, slightly woolly. *Cal.* skinny, coloured, a little hairy. *Florets* 5 and 6. *Bloss.* purplish red, sometimes white: clefts shallow. *Styles* and *summits* with a tinge of red. *Germen* with minute shining globules.

Hemp Agrimony. Dutch Agrimony. Water Agrimony. Water Hemp. Common Hempweed. Banks of rivers and brooks.

P. July, Aug.

Var. 2. Leaves single, egg-spear-shaped.

This is the seedling plant of early flowers the first year; the second year, as I have frequently observed, it has fingered leaves. Mr. Woodward.

Near Lee, in the road to Eltham. Dill. [Near Bungay, Suffolk. Mr. Woodward.]*

SANTOLI'NA. *Recept.* chaffy: *down* none: *calyx* tiled, hemispherical.

S. maritima. Flowers forming a corymbus; leaves oblong, blunt, scolloped, very downy. *E. bot.*

Dicks. h. s.–E. bot. 141–*Mill.* 135–*J. B.* iii. *a.* 157. 2–*Pet.* 20. 8–*Lob. adv.* 201, *and ic.* i. 480. 1–*Ger.* 516–*Clus.* i. 329. 3–*Dod.* 65–*Ger. em.* 640. 3–*Matth.* 860–*H. ox.* vi. 4. 47.

Whole *plant* cottony. *Leaves* spear-shaped, scolloped, blunt. *Chaff* as long as the calyx. *Seeds* 2-edged, down-less, whence it should seem to be rather a species of *Santolina*. Linn. *Blossom* bright yellow.

Athanasia maritima. Linn. *Sea Cotton-weed. Sea Cudweed.* On the sea shore. Near Abermeney Ferry in Anglesea; and between Penzance and St. Michael's Mount, Cornwall. Isle of Sheppey; and near Pool, Dorsetshire. [On the Devonshire coast.] P. Aug. Sept.

* An infusion of a handful of it vomits and purges smartly. An ounce of the root in decoction is a full dose. In smaller doses the Dutch peasants take it as an alterative, and as an anti-scorbutic. Goats eat it. Cows, horses, sheep, and swine refuse it.

SUPERFLUA.

TANACE'TUM. *Recept.* naked: *down* none: *calyx* hemispherical, tiled: *florets* of the circumference 3-cleft, narrow-strap-shaped; sometimes wanting.

vulga're. T. Leaves doubly winged, cut, serrated.

Woodv. 115–*Kniph.* 2–*Ludw.* 22–*Fl. dan.* 871–*Dod.* 36. 1–*Lob. obs.* 432. 1, *and ic.* 749. 1–*Ger. em.* 650. 1–*Park.* 81. *b.*–*H. ox.* vi. 1. *row* 1. 1. *f.* 1–*Pet.* 20. 9–*Blackw.* 464–*Fuchs.* 46–*J. B.* iii. *a.* 131. 2–*Ger.* 525. 1–*Trag.* 158–*Matth.* 908–*Lonic.* i. 151. 3.

The *florets* of the circumference sometimes appear in warm summers. LINN. *Flowers* in a corymbus, yellow; those *hermaphrodite* 5-cleft; *females* 5-cleft. RELHAN. *Stem* frequently reddish. *Leaves* winged, leafits wing-cleft, wings spear-shaped, deeply and acutely serrated. WOODWARD.

Common Tansy. Mountainous meadows and pastures. Banks of rivers and swampy places. [Banks of the Invell and other places about Manchester. Mr. CALEY. Banks of the Dove. Mr. PITT. Between Piper's Hill and Bridgewater, and in Devonshire, frequent.] P. June.

Var. 2. Leaves curled.

Ger. 525. 2–*Dod.* 36. 2–*Lob. obs.* 432. 3, *and ic.* i. 749. 2–*Ger. em.* 650. 2–*Park.* 81. *a*–*J. B.* iii. 132.

Ray tells us that this variety was first observed in England. [It grows by the Tees near Connis Cliffe, Durham. Mr. ROBSON.]*

ARTEMIS'IA. *Receptacle* either slightly hairy or naked: *down* none: calyx tiled; the scales roundish, closing: *florets* radiate, none.

(1) *Stems trailing before the time of flowering.*

campes'tris. A. Leaves many-cleft, strap-shaped: stems trailing, rod-like.

* This is a warm deobstruent bitter, and its flavour not ungrateful.—The tender leaves are sometimes used to give a colour and flavour to puddings.—If a dead animal substance is rubbed with this plant, the flesh fly will not attack it.—The Finlanders obtain a green dye from it. Cows and sheep eat it. Horses, goats, and swine refuse it. It gives nourishment to the *Aphis Tanaceti*, and *Chrysomela Tanaceti*. LINN. The seeds are an excellent vermifuge.

E. bot. 338–*Fl. dan.* 1175–*Ger.* 948. 5, *Abrot. camp.*–*J. B.* iii. *a* 194. 2–*Pet.* 20. 4–*Dod.* 33. 2–*Lob. obs.* 442. 3. *and ic.* i. 767. 2–*Ger.* 1106. 5–*Park.* 94. 7–*Matth.* 852 –*Lonic.* ii. 23. 2.

Branches simple, alternate, from the bosom of the leaves, somewhat drooping. *Flowers* solitary, pointing one way. The *female florets* mostly ♀, the *hermaphrodite* ♂. *Summits* orbicular, glass-shaped. *Receptacle* naked. LINN. *Stems* numerous, angular, declining, much branched. *Leaves*, the upper frequently simple, very narrow. *Heads* very small, scarcely more than a line broad, numerous, single, either sitting or in short branched spikes. *Cal.* scales few, bluntly egg-shaped, approaching, green, slightly downy at the back, the edges membranaceous, whitish, shining. *Florets* not longer than the calyx. WOODWARD. *Leaves* thread-shaped, from $\frac{1}{4}$ to 1 inch or more in length. *Flowers* axillary. *Bloss.* reddish brown.

Field Southernwood. Balks of cornfields and road sides at Elden, Suffolk, and a mile from Barton Mills on the road to Lynn. [Near Thetford, on the side of the road to Norwich. WOODWARD.] P. July.

A. Leaves many-cleft, cottony: bunches on crooked fruit-stalks: female florets 3. — *marit'ima.*

Ger. 940. 1–*Pet.* 20. 2 *and* 3–*Lob. ic.* i. 755. 1–*Ger. em.* 1099. 1–*H. ox.* vi. 2. 20–*H. ox.* vi. 2. 19.

Whole *plant* of a snowy white. *Flowering branches* crooked. The female flowers in the circumference, but 3. *Receptacle* naked. The *seeds* seldom ripen in gardens. LINN. Whole *plant* white with thick cotton. *Leaves* vary much in their division; the upper generally simple, strap-shaped, blunt. WOODWARD. *Bloss.* brown.

Var. 2. Segments of the leaves very short.

J. B. iii. *a* 177–*Barr.* 460.

Sea Southernwood. Sea Wormwood. Sea shores. [Yarmouth, and elsewhere on the coast. WOODWARD. Sea coast between Rampside and Barrow. Mr. GOUGH. Isle of Walney. Mr. ATKINSON.] P. Aug.*

* This in its wild state smells like Marum or Camphor, but in our gardens it is less grateful, though still much more grateful than the next species. It is used as an ingredient in distilled waters, and beat with thrice its weight of fine sugar it is formed into a conserve. Its virtues are the same with those of the next species, but in a weaker degree. Horses eat it; cows, goats, and sheep refuse it.

(2) *Stems upright, herbaceous: Leaves compound.*

Absin'thium. A. Leaves compound, many-cleft: flowers somewhat globular, pendent: receptacle woolly.

Kniph. 4–*Ludw.* 76–*Woodv.* 120–*Blackw.* 17–*Matth.* 685–*Dod.* 23–*Lob. obs.* 433. 2, *and ic.* i. 752. 1–*Ger. em.* 1096. 1–*Park.* 98. 1–*H. ox.* vi. 1. *row* 3. 1–*Ger.* 937. 2–*Trag.* 335–*Ger.* 937. 1–*Pet.* 20. 1–*J. B.* iii. *a.* 168–*Gmel.* ii. 63.

Receptacle hairy. LINN. *Leaves* cottony on both sides, green above, white and shining underneath, the upper with 3 clefts, or simple, sitting, bluntly spear-shaped. *Calyx*, scales bluntly egg-shaped, green, and cottony at the back, the edges membranaceous. *Receptacle*, down as long as the florets. WOODWARD. *Stems* scored, whitish, with very short down. *Leaves* silky and very soft; segments blunt, and the lower on long flat leaf-stalks. *Spikes* upright. *Flowers* turned downwards. *Leaves* dark green on the upper, but white on the under surface. *Bloss.* brownish white.

Wormwood Southernwood. Wormwood. Road sides, rocky places, and on rubbish. P. Aug.*

vulga'ris. A. Leaves wing-cleft, flat, cut, cottony underneath: bunches simple, bending: florets of the circumference 5.

Fl. dan. 1176–*Ludw.* 153–*Blackw.* 431–*Woodv.* 121–*H. ox.* vi. 1. *row* 2. 2. *f.* 3–*Matth.* 848–*Dod.* 33. 1–*Lob. obs.*

* The leaves and flowers are very bitter; the roots are warm and aromatic. A considerable quantity of essential oil rises from it in distillation. This oil is used both externally and internally to destroy worms. The leaves, put into sour beer, soon destroy the acescency. They resist putrefaction, and are therefore a principal ingredient in antiseptic fomentations. An infusion of them is a good stomachic, and with the addition of fixed alkaline salt, a powerful diuretic in some dropsical cases. The ashes afford a more pure alkaline salt than most other vegetables, excepting Bean-stalks, Broom, and the larger trees. In the *Amæn. Acad.* v. ii. p. 160, Linnæus mentions two cases, wherein an essence prepared from this plant, and taken for a considerable time, prevented the formation of stones in the kidneys or bladder; the patients forbearing the use of wine and acids. It might be suspected that, like other bitters, its long continued use must weaken the action of the nervous system, but in these instances no such effect took place. An infusion of it given to a woman that suckles, makes her milk bitter. It gives a bitterness to the flesh of sheep that eat it.—Horses and goats are not fond of it; cows and swine refuse it. LINN. Turkeys are fond of it. Mr HOLLIDAY. A horse eat it. The plant steeped in boiling water, and repeatedly applied to a bruise, will remove the pain in a short time, and prevent the swelling and discoloration of the part. ST.

441. 1, *and ic.* i. 764. 2–*Ger. em.* 1103. 1–*Park.* 90 *and* 91. 2–*Ger.* 945. 1, 2–*Fuchs.* 44–*J. B.* iii. *a.* 184. 3–*Trag.* 344–*Lonic.* i. 151. 1.

Receptacle naked. LINN. *Stem* angular, scored, often red, downy above. *Leaves* above green and slightly cottony; underneath white with thick cotton; wings oval-spear-shaped, deeply serrated, almost lobed, the terminating one large, with 3 lobes. *Calyx*, scales extremely woolly; edges not membranaceous. *Florets* longer than the calyx. WOODWARD. *Stems* ascending, branched, scored, reddish purple. *Leaves* dark green and smooth above, cottony and whitish underneath. *Fruit-stalks* alternate, from the bosom of the leaves. *Bloss.* purplish.

Mugwort. Southernwood. Borders of fields, ditch banks, and on rubbish. P. Aug.*

(3) *Leaves simple, undivided.*

A. Stem-leaves spear-shaped, entire; root-leaves many-cleft: female flowers 3. — cœrules'cens.

H. ox. vi. 1. 5–*Dod.* 26. 2–*Lob. obs.* 441. 2, *and ic.* i. 765. 2–*Ger. em.* 1104. 3–*Matth.* 687–*Ger.* 946.

Leaves woolly on both sides. *Flowers* cylindrical, nodding. *Florets* of the circumference 3. Hence its very close affinity to A. *maritima*, from which, however, it differs totally in its leaves. LINN.

Bluish Southernwood. Sea shores. Near Boston, in Lincolnshire. P. Aug.

GNAPHA'LIUM. *Receptacle* naked: *down* hair-like, or feathered: *calyx* tiled: *scales* roundish: skinny, and coloured at the edge.

(1) *Herbaceous; yellow-flowered.*

G. Leaves sword-shaped, half embracing the stem, serpentine at the edge, blunt, downy on both surfaces: flowers crowded close together. — lu'teo-al'bum

* In some countries it is used as a culinary aromatic. A decoction of it is taken by the common people to cure the ague. The Chinese make use of it in healing wounds, applying the fresh plant bruised. OSBECK i. 394. A dram of the leaves powdered, was given four times a day, by Dr. Home, to a woman who had been affected with hysteric fits for many years. The fits ceased in a few days. In this patient Assafœtida and Ether had been given to no purpose.—Sheep and swine refuse it; neither horses, cows, or goats are fond of it. LINN. Dr. Anderson informs us, that sheep are very fond of it, devouring it with great greediness, especially the roots, which seem to form a most delicate morsel. The *Aptera Absinthii* and the *Phalæna Gamma* live upon the several species.

Dicks. h. s.–*Kniph.* 1–*Pluk.* 31. 6–*Barr.* 36; –*J. B.* iii. *a.* 160. 2–*Pet.* 18. 5–*Ger.* 522. 3–*Clus.* i. 329. 1–*Ger. em.* 643. 13–*Park.* 686. 6–*H. ox.* vii. 11. *row* 2. *f.* 3–*Lob. ic.* i. 485. 2–*Park.* 688. 9.

Plant very woolly. *Calyx* yellowish, white, soft; scales egg-spear-shaped *Female florets* in the circumference numerous. LINN. *Florets of the circumference* with only pistils; *in the centre* a few with stamens and pistils. HALL.

Everlasting. Live-for-ever. Jersey Cudweed. Dry banks and walls in the island of Jersey, very common. *R. Syn.* Sea coast of Wales. GER. *em.* West sea coasts. PARK. A. July, Aug.

(2) *Herbaceous; white-flowered.*

margarita'ceum. G. Leaves strap-spear-shaped, tapering, alternate: stem branched towards the top: flowers in a corymbus.

Munt. 614. 170–*Clus.* i. 327. 3–*Ger. em.* 641. 8–*Pet.* 18. 3 –*Kniph.* 1&–*J. B.* iii. *a.* 162. 2–*Park. par.* 373. 3.

Female florets few. HALLER. *Stem* extremely cottony, white. *Leaves* numerous, strap-spear-shaped, long, sitting, growing without order, very entire, dark green and naked above, underneath greenish white, with a thick cotton. *Flowering branches* with numerous crowded heads at the end, on short branched cottony fruit-stalk, with a middle one sitting. *Calyx* bluntly egg-shaped, white, not cottony. *Down* simple, sitting, as long as the calyx. WOODW.

American Cudweed. Meadows, pastures and banks of rivers. In a meadow near Bocking, Essex. and on the banks of Rymny river for the space of at least 12 miles. Such are the habitats given by Ray and repeated by Hudson, but the former seemed to doubt its being a native, and neither the latter nor any other botanist that I have heard of has given us any further fact to invalidate the suspicions of Mr. Ray. It is frequent in our gardens. P. Aug.

dioi'cum. G. Runners trailing: stem undivided: flowers in a simple corymbus: male and female flowers on distinct plants.

Male plant—*E. bot.* 267–*Dod.* 68. 1. 2–*Lob. ic.* i. 483. 1. 2–*Ger. em.* 640. 4 *and* 5—Female plant.–*E. bot.* 267–*Lightf.* 20. 1. *at p.* 171–*Ludw.* 165–*Kniph.* 3–*Clus.* i. 330. 1–*Dod.* 68. 3–*Lob. ic.* i. 483. 3–*Ger. em.* 641. 6–*Park.* 690. *f.* 3–*Pet.* 18. 4–*Fuchs.* 606–*J. B.* iii. *a* 162. 3–*Lonic.* i. 95. 2–*H. ox.* vii. 11. *row* 3. *f.* 2–*Trag.* 332 –*Garid.* 30. *at p.* 168–*Ger.* 516. 4, 5, 6–*Lob. adv.* 202. 2, *and ic.* i. 482. 2.

In the barren plants the heads almost globular: in the fertile ones nearly cylindrical. LINN. I believe it is rarely that ripe seeds are produced, as is the case with many plants which creep at the root. *Root* woody, brown, with a few stiff fibres. *Runners* several, creeping, leafy, from the crown of the root. *Root-leaves* in a thick tuft, oval at the end, tapering below into a long leaf-stalk, green and slightly hairy above, underneath white with a thick cotton; *stem-leaves* numerous, strap-shaped, half embracing the stem, green above, white and cottony underneath. *Stems* upright, simple, 3 to 7 inches high, white, cottony. *Heads* 3 to 8, on short fruit-stalks. *Cal.* scales blunt, the outer short, green, cottony; the inner widening upwards, long, smooth, shining, white, frequently tinged with purple; in the barren plants shorter. *Seeds* short; *down* sitting, with simple rays, that of the female plants longer than the calyx, that of the male plants not exceeding the calyx. WOODWARD. *Blossom* white, purple, reddish.

Catsfoot. Cudweed. Dry mountainous pastures in the north of England, Wales and Cornwall, and on Newmarket Heath not far from Bottesham Beacon. [Canham Heath near Bury, Swaffham Heath, Stratton Heath, Norfolk. Mr. PITCHFORD. Abundantly on the north and west side of the county of Durham. Mr. ROBSON.] P. May, June.

(3) *Herbaceous: resembling the Filagos.*

G. Stem undivided, upright: leaves spear-shaped, narrowing at the base: flowers in a crowded terminating leafy spike. sylvat'icum.

Fl. dan. 254.

Differs from the G. rectum in having broader leaves, and a short clustered spike of black flowers. LIGHTF. *Leaves* more attenuated at the base, and less naked on the upper surface than in Gn. rectum. Dr. SMITH.

Mountain Cudweed. Gn. *Norvegicum.* Retz. and Fl. dan. G. *Sylvat.* var. Lightfoot. Woods on mountains in the Highlands of Scotland. P Aug.

G. Stem upright, terminating in a leafy compound-spike: leaves strap-spear-shaped, almost naked on the upper side. *E. bot.* rec'tum.

E. bot. 121–*Pet.* 18. 6–*Lob. adv.* 202. 1, *and ic.* i. 482. 3. *G. angl.*–*J. B.* iii. 160. 1–*Matth.* 828. 2–*Ger.* 515. 1–*Ger. em.* 639. 1–*H. ox.* vii. 11. 1.

Leaves green and hairy above, white and cottony underneath; *root-leaves* long, strap-spear-shaped, very narrow, in open ground forming a thick tuft; *stem-leaves* strap-shaped, em-

bracing the stem, numerous. *Stem* in woods frequently solitary, 12 to 18 inches high, in open ground several from one root, shorter, often at first declining, but very soon ascending. *Flowers* in a long bunch. *Flower-stalks* very short, lateral, from the bosom of the leaves, with from 1 to 5 or more flowers, the lowermost somewhat distant, the upper crowded. *Flower-leaves* similar to, but smaller than the stem-leaves. *Heads* very small. *Cal.* bluntly oval, greenish at the base, yellowish brown upwards, smooth, with shining edges; the outer short, the inner as long as the florets. *Seeds* minute; *down* sitting, as long as the calyx; rays simple. WOODWARD. *Stem* sometimes only 3 inches high. *Hermaphrodite florets* 3. *Down* hair-like. ST. *Leaves* narrow, sharp, downy underneath. *Calyxes* white, shining. *Bloss.* yellowish.

Upright Cud-weed. G. *sylvaticum.* Bot. arr. *ed.* ii. Pastures and woods in a sandy soil. Rough pastures near Fladbury, Worcestershire. NASH. [On the great Island in Winandermere. Armingdale Wood near Norwich. Mr. WOODWARD. Sandy heath a mile from Shiffnall on the road to Wolverhampton. Banks of the canal in the parish of Coseley, Warwickshire. ST. Pastures and woods in the county of Durham. Mr. ROBSON. Lanes about Mottershall, Staffordsh.] P. Aug.

supi'num. G. Stem undivided, trailing: flowers scattered.

Dicks. h. s.–Lightf. 20. 2. *at p.* 471–*Scop.* 57. *at* ii. *p.* 152–*Bocc. rar.* 20. 1. *at p.* 41.

Flowers mostly female, but a few in the centre hermaphrodite. LIGHTF. *Root-leaves* strap-spear-shaped, slightly hairy above, underneath cottony, and greenish white, one half to 3 quarters of an inch long, in tufts; *stem-leaves* sitting, narrower and longer. *Stem* one and a half to three inches high. *Heads* 3 and 4, alternate, either sitting, or on short cottony fruit-stalks, from the bosom of the upper leaves, which are not longer than the heads. *Cal.* scales spear-shaped, with a green longitudinal line at the base; the tips and edges shining, of a brownish yellow. *Seeds* elliptical; *down* sitting, rays simple, as long as the florets and longer than the calyx. Specimen from Dr. Smith gathered on Ben Lomond. Mr. WOODWARD.

Dwarf Cud-weed. Gnaphalium alpinum. LIGHTFOOT. Dry mountainous pastures and meadows. On almost all the Highland mountains. Mr. BROWN. [On the top of Ben Lomond. Dr. SMITH.] P. July, Aug.

uligino'sum. G. Stem branched, spreading: flowers crowded, terminating.

Dicks. h. s.–Fl. dan. 859–*H. ox.* vii. 11. 14. *f.* 4–*Dod.* 66. 3–*Lob. ic.* i. 481. 1–*Ger. em.* 639. 2–*Park.* 686. 4–*Pet.* 18. 7–*Ger.* 515.

Stem 3 to 9 inches high or more, upright, with a thick white cotton, much branched; branches spreading, more cottony and thicker towards the end, the lower often trailing, cloathed with numerous leaves particularly towards the end, and these thickest and most cottony. *Leaves* elliptical, tapering into a long leaf-stalk, slightly cottony and greenish above, more cottony and whitish underneath. *Flowers* nearly sitting. *Cal.* scales spear-shaped, smooth, brown, shining, when in seed blackish, almost hid in the cotton. *Down* sitting, with simple rays, as long as the calyx. WOODWARD. Whole *plant*, particularly the base of the calyxes and fruit-stalks, covered with a cottony substance. *Leaves* strap-shaped. *Flowers* globular. *Cal.* shining, yellowish-brown-green, turning black; *scales* skinny, inner ones oblong. *Bloss.* yellowish.

Black-headed Cudweed. In watery places, especially where stagnant water has stood during the winter. A. Aug.

G. Stem forked, upright: flowers awl-shaped, axillary: leaves thread-shaped. gal'licum.

Dicks. h. s.–Pluk. 298. 2–*Pet.* 18. 12.

Leaves somewhat cottony, but smooth, not hairy. LINN. Whole *plant* cottony, but the cotton shorter than either that of the *germanicum* or *montanum*. *Stem* much branched. *Leaves* awl-shaped, half embracing the stem, about an inch long. Mr. WOODWARD.

Filago gallica. LINN. *Grass-leaved Cudweed.* Gravelly cornfields. In sandy ground about Castle Haveningham, Essex. [Heaths, Derbyshire. Mr. WOODWARD.]

G. Stem somewhat forked: flowers conical, axillary and terminating. monta'num.

Pet. 18. 11–*H. ox.* vii. 11. 3. *a.*–*Ger.* 517. 8–*Lob. ic.* i. 481. 2–*Ger. em.* 641. 9–*J. B.* iii. *a.* 159–*H. ox.* vii. 11. 3. *b.*

Stem much branched, cottony. *Leaves* spear-shaped, sitting, pressed to the stem, cottony, 3 or 4 lines long. Mr. WOODWARD. *Stems* upright or spreading, 2 to 6 inches high. *Leaves* pressed to. *Heads* roundish, sometimes from the sides, with from 3 to 5 flowers. *Flowers* pyramidal, 5-cornered, sitting, or on very short fruit-stalks. *Hermaphr.* florets 4, in the very centre, fertile. *Fem.* florets about 15 in the disc, and 4 or 5 in the circumference, lying within the scales of the common calyx, all fertile. *Anthers* of the hermaphr. florets 4, with 2 bristles at the base. *Bloss.* 4-cleft. *Seeds* of all the florets of the centre sprinkled with very short glandular hairs, crowned with down; those of the florets of the circumference very smooth and downless. *Down* hair-like. Hence it appears that one species at

least of Linnæus's Filago belongs to the Syngen. *Superflua* order, according in structure as well as habit with the *Gnaphaliums*. ST.

Filago montana. LINN. *Least Cudweed.* Sandy meadows and pastures. [Manchester Race ground. Mr. CALEY.]
P. July, Aug.

arven'se. G. Stem supporting a panicle: flowers conical, lateral.

As there is no figure, it is difficult to say whether our small Gnaphalium belongs to this or the preceding species, but it is certain that what I have now before me for the Gn. *montanum* does not agree with either the character or figures of that species, for the stem bears a panicle of flowers. It is possible we may have both species, as Linnæus says they grow together.

Filago arvensis. LINN.

german'icum. G. Panicle forked: flowers roundish, axillary, hairy: leaves acute.

Fl. dan. 997–*Sheldr.* 92–*Park.* 685. 3–*Pet.* 18. 10–*Fuchs.* 222–*J. B.* iii. *a.* 158–*Lonic.* i. 174. 3–*Matth.* 861–*Dod.* 66. 2–*Lob. obs.* 255. 1, *and ic.* i. 480. 2–*Ger. em.* 642. 10–*H. ox.* vii. 11. 10–*Pet.* 18. 9–*Ger.* 517. 9.

Cal. 5-cornered. *Fem. florets* not within the common calyx, but between its scales. LINN. *Stems* several, the central one thickest; leafy. *Leaves* strap-spear-shaped, sitting, waved, cottony. WOODWARD. *Branches* horizontal, mostly 2 and sometimes 3 from below the head terminating the stem, each terminated by similar heads, from the base of which other branches proceed, subdividing several times so as to appear forked. *Florets* of 3 kinds. FLORETS OF THE CENTRE OF THE DISC, 2 or 3, *hermaphrodite* tubular; border 4 cleft. FLORETS OF THE SIDES OF THE DISC, numerous, *female border* 4-cleft, upright; *seeds* fertile. FLORETS BETWEEN THE OUTER SCALES OF THE CALYX. *Seeds* oblong. LEERS. *Stems* upright, branched at the top. *Branches* rising above the stem. *Flowers* conical, sitting, yellowish brown. *Heads* solitary, surrounded with scattered leaves. *Stam.* 4. *Anthers* with 2 bristles at the base similar to those of Inula. ST. *Calyx* outer scales very woolly; the inner skinny, spear-shaped ending in long taper points. *Blossom* yellowish. *Germens* in all the florets rough, and crowned with down.

Filago germanica. LINN. *Common Cudweed. Chafeweed.* Barren meadows, pastures, and road sides. A. July, Aug.*

* It is given to cattle that have the bloody flux; and hath been tried with success in similar complaints of the human body.—A horse eat it. ST.

CONY'ZA. *Recept.* naked: down hair-like: *calyx* tiled, roundish: *florets* of the circumference 3-cleft.

C. squarro'sa. Leaves spear-shaped, acute: stem herbaceous: flowers in a corymbus: scales of the calyx with their points turned outwards.

Blackw. 102–*J. B.* ii. 1051. 2–*Matth.* 870–*Clus.* ii. 21. 2–*Dod.* 51. 2–*Lob. obs.* 308. 3, *and ic.* i. 574. 1–*Ger. em.* 792–*Park.* 114–*Pet.* 18. 1–*H. ox.* vii. 19. 23–*Fl. dan.* 622.

Leaves bluntly-oval-spear-shaped, irregularly serrated, woolly on both sides, decreasing in size upwards, those at the base of the flowering branches spear-shaped, or strap-spear-shaped, scarce perceptibly serrated. *Flowers* numerous. *Fruit-stalks* short, woolly. *Floral-leaves* spear-shaped, small, 1 on each fruit-stalk. *Cal.* scales strap-spear-shaped, numerous, the lower green, the upper yellowish, the points green and expanding. *Seeds* small, blackish, furrowed. *Down* sitting, as long as the calyx. Mr. Woodward. *Stem* 2 or 3 feet high; nearly cylindrical, reddish, rough with short woolly hairs. *Leaves* woolly underneath, and hairy above. *Cal.* scales purplish at the edge, with very short woolly hairs on the outside. *Bloss.* yellow; *florets without pistils*, in the circumference with petals; *individuals with only pistils*, slightly cloven into 3, have at first sight the appearance of a funnel-shaped floret, but are really more of the nature of a strap-shaped floret. *Bloss.* dusky purple, or yellowish.

Great Flea-bane. Plowman's Spikenard. Spikenard Plowman's-wort. Mountainous meadows and pastures and road sides in a calcareous soil. [Woods in Norfolk in a clayey soil, very common. Dr. Smith. At Force Forge, and at Hollow Oak in Furness Fells. Mr. Jackson. On the common near Pennybridge. Mr. Atkinson. Lilleshall Abbey. Shropsh.]

B. July, Aug. Sept.

ERI'GERON. *Recept.* naked: *down* hair-like: *florets* of the circumference strap-shaped, very narrow.

E. canaden'se. Stem and flowers panicled, rough with hair: leaves spear-shaped, fringed.

Bocc. rar. 16. *at p.* 86–*H. ox.* vii. 20. 29–*Pet.* 16. 12–*Zanon.* 23. 1.

Stem firm, frequently crooked, much branched towards the top. *Leaves*, the lower oval, tapering into a leaf-stalk; those

above spear-shaped, with distant serratures, slightly hairy above, more so underneath; those at the base of, and on the branches, strap-spear-shaped, very entire, sitting. *Flowers* numerous. *Fruit-stalks* slender, branched and simple. *Cal.* outer scales short, the inner longer, strap-shaped, with a green line along the back, whitish and membranaceous at the edge. *Florets* very small. *Seeds* minute. *Down* sitting, simple, as long as the florets. Mr. Woodw. *Florets* in the centre, yellow; those in the circumference white, with a tinge of red.

Canada Fleabane. Cultivated ground and on rubbish. About London, common. [St. Vincent's Rocks, Bristol.]
A. Aug. Sept.

al'pi'num. E. Leaves blunt, woolly underneath: stem with 1 or 2 flowers: calyx rather hairy.

E. bot. 464–*Fl. dan.* 298–*Fl. lapp.* 9. 3–*J. B.* ii. 1047, *right hand figure.*

Stems a finger's length, unbranched, supporting a single flower, scored, besprinkled with hairs. *Leaves* few, alternate, spear-shaped, green, nearly smooth above, set underneath with expanding hairs. *Cal.* scales numerous, equal in length, spear-shaped; the outer scales broader, expanding, with longer hairs on both surfaces. *Florets* in the circumference white, as long as the calyx. *Petals* very numerous, strap-shaped and entire. *Style* thread-shaped, white, acute, cloven. *Central florets* numerous, yellow; styles yellow, cloven, blunt. *Fl. Suec.* *Down* a reddish rust-colour. *Sp. pl.* Linnæus seems to consider the E. alpinum and E. uniflorum, as strictly forming but one species, observing that the former sometimes bears a panicle of white flowers, and the calyxes smooth. On this account we have given his additional remarks on both species. *Bloss.* purple and yellow.

Found by Mr. Dickson on wet rocks on Ben Lawers; but first discovered in this Island by the Rev. Mr. Stuart of Luss on Ben Lawers, and on Shuc and Lochain. Mr. Brown. P.

a'cre. E. Fruit-stalks alternate, with 1, 2, or 3 flowers.

Curt–J. B. ii. 1043. 2–*Dod.* 641. 4–*Ger. em.* 484. 10–*Park.* 126. 6–*Pet.* 16. 4–*Col. ecphr.* ii. 26. 2–*H. ox.* vii. 20. 25.

Stems 6 to 18 inches high, somewhat angular, hairy, often purple. *Leaves*, the lower oval, tapering down into a leaf-stalk; the upper spear-shaped, the uppermost strap-shaped, hairy on both sides, but mostly at the edge, very entire, often waved at the edge. *Cal.* scales unequal, awl-shaped, hairy. *Florets* of the circumference purple, a little longer than those of the centre; florets of the centre yellow. *Down* sitting, simple, yellow, as

long as the florets. Mr. Woodw. *Stem* undivided, near 2 feet high, hairy. *Leaves* spear-shaped, alternate, sitting, hairy. *Fruit-stalks* from 1 to 3 inches, supporting from 1 to 3 flowers.

Blue Fleabane. Very dry meadows and pastures in a calcareous soil. [Narford, Norfolk. Mr. Woodward. St. Vincent's Rocks, Bristol. Lime rocks, Dudley. Lilleshall Abbey, Shropshire.] B. July, Sept.

TUSSILA'GO. *Recept.* naked: *down* hair-like: *calyx* scales equal, as tall as the surface of the florets, somewhat membranaceous.

T. Stalk with 1 flower; tiled: leaves somewhat heart-shaped, angular, finely toothed. Far'fara.

Curt.-E. bot. 429-*Kniph.* 6-*Walc.-Ludw.* 50-*Blackw.* 204-*Fl. dan.* 595-*Woodv.* 13-*H. ox.* vii. 12. *row* 1. 1. *f.* 1-*Dod.* 596. 1 *and* 2-*Lob. obs.* 320. 1, *and* 2, *and ic.* i. 589. 1, *and* 2-*Ger. em.* 811-*Ger.* 666-*Park.* 1220-*Pet.* 17. 8, *and* 7-*Fuchs.* 140-*J. B.* iii. *b.* 563. 3-*Trag.* 418-*Matth.* 844-*Lonic.* i. 226. 2.

Root creeping. *Leaves* appearing as the flowers are going off, with several blunt lobes sharply toothed, green above with reddish veins, white and cottony underneath, the cotton easily rubbing off. *Leaf-stalks* long, reddish brown. *Stalks* numerous, solitary or in clusters, 3 to 5 inches high, lengthening after flowering, cottony, clothed with spear-shaped scales embracing the stalk, of a green mixed with brown. *Flowers* while in blossom upright, after flowering hanging down, but when the *down* of the seeds expand becoming upright again. *Cal.* scales strap-shaped, reddish brown. *Bloss.* yellow. *Florets of the circumference* very narrow, in 2 or 3 rows, as long as the calyx, expanding. *Florets of the centre* tubular, swelling upwards; clefts 5, spear-shaped, bent back. *Summit* before the anthers have discharged their pollen covered by them, club-shaped and simple, but afterwards lengthened beyond them. *Down* sitting, longer than the calyx. Mr. Woodw.

Common Colt's-foot. Pastures and moistish places, in moist, stiff, clayey soil, and on limestone rubbish. P. March, April.*

* It is the first plant that vegetates in marl or limestone rubble. The downy substance on the under surface of the leaves, wrapped in a rag, dipped in a solution of Saltpetre, and dried in the sun, makes the best tinder. The leaves are the basis of the British Herb Tobacco. They are somewhat austere, bitterish, and mucilaginous to the taste. They were formerly much used in coughs and consumptive complaints; and perhaps not without reason, for Dr. Cullen found them to do considerable service in scrophulous cases; he gave a decoction of the dried leaves, and found

Petasi'tes. T. Panicle egg-shaped: female florets few. LINN.—*entirely wanting in our plants.* WOODWARD.

Curt. 134–*E. bot.* 431–*Blackw.* 222–*Fl. dan.* 842–*Clus.* ii. 116. 1, *and* 2–*Dod.* 597–*Lob. obs.* 321. 2, *and* 3, *and ic.* i. 591–*Ger. em.* 814–*Pet.* 15. 12, *and* 11–*Ger.* 668–*H. ox.* vii. 12. 1. *f.* 3–*Park.* 419. *f.* 3–*Fuchs.* 645–*J. B.* iii. 566. 2–*Trag.* 415–*Lonic.* i. 226. 1–*Matth.* 845.

Leaves the largest of any of our native plants. The *flowers* appear before the leaves, as they do also in T. *Farfara* and most other spring plants. LINN. *Fem. florets* amongst the hermaphrodite, 2 or 3, scarcely to be said to have petals, strap-shaped, white. LINN. THE SON. *Seeds* altogether barren. *Style* thread-shaped. *Summit* knobbed, spear-oblong, the point cloven. *Seeds* barren. The thick-headed club-like summit I believe may be depended upon as a certain mark of barrenness in the florets of the compound flowers of the Syngenesia class, and evinces the propriety of removing this genus to the order *Polygamia necessaria.* How they are propagated, unless by lateral shoots, I do not know, but this will not account for its general diffusion over the island, unless we suppose that, in this country, as well as in Switzerland and Sweden, they sometimes produce a few female florets interspersed among the rest. ST. *Stalk* 8 to 12 inches high, with numerous spear-shaped scales embracing the stalk. *Florets* all hermaphrodite, tubular; at the base narrow and greenish white; upwards swelling, reddish without, and white within, deeply divided into 5 spear-shaped expanding segments. *Anthers* as long as the blossom, purplish. *Pollen* yellow. *Pistil* white. *Summit* club-shaped, downy, shorter than the anthers before they have discharged their pollen, longer afterwards. *Down* sitting. Mr. WOODWARD.

Butterbur. Coltsfoot. Pestilent-wort. Moist meadows and pastures, and banks of rivers. [In a meadow on the west side of Wellington, Shropshire; and in Mottershall Brook near Stone, Staffordshire. On the sides of the Water of Leith, near St. Bernard's Well, Edinburgh.] P. March, April.*

found it succeed where sea-water failed. *Cullen's Mat Med.* p. 458—And FULLER relates a case of a girl, with twelve scrophulous sores, who was cured by drinking daily as much as she could, for above four months, of a decoction of the leaves made so strong as to be sweetish and glutinous. *Med. Gymn.* p. 91 Goats and sheep eat it. Cows are fond of it Horses and swine refuse it. LINN. It may be destroyed by cutting off the crown of the root in March. Mr. PITT.

* The roots abound with a resinous matter. They have a strong smell and a bitterish acrid taste. Horses cows, goats, and sheep eat it. Its large leaves afford shelter from showers to poultry and other small animals. LINN.

T. Panicle oblong: female flowers numerous, without hy'brida.
blossoms.

E. bot. 430–*Dill. elth.* 230. 297.

Down sitting. LEERS. *Leaves* exactly like those of T. *Petasites. Stalk* 1 to 2 feet high, with numerous scales like those of T. *Petasites. Fruit-stalks* branched, woolly, with several flowers. *Flowers* smaller than those of T. *Petasites. Cal.* bellying, slightly cottony; scales nearly equal, pale, green, purplish at the points and edges. *Fem. florets* numerous, white, slightly and irregularly cloven into 5 or 4 segments, closely embracing the style. *Hermaphrodite florets* usually 1, sometimes 2 in the centre, but frequently wanting; purplish without, white within; the tube narrow, swelling upwards, and divided into 5 equal, bluntly-shaped, expanding segments. *Anthers* purple, shorter than the blossom. *Style* longer. *Summit* slightly cloven, in the hermaphrodite club-shaped, in the females slender. Described from a growing plant, but not wild. Mr. WOODWARD. *Panicle* 6 inches long, tapering at the end. *Seeds* in what I have examined, but they have been only dried specimens, generally abortive, never having found more than 1 fertile seed. ST. (T. *hybrida*, RETZ. *obs.* i. 99, must, from the description of its leaves, be a different plant. Mr. WOODWARD.)

Long-stalked Coltsfoot. [Dishley Mill. Moist meadows Near Loughborough, Leicestershire. Dr. ARNOLD. Near Banbury, Oxfordshire. DILL. *elth.* p. 310. Mr. WOODWARD. Very common about Manchester, the banks of the Irwell are crowded with it. It will shoot up from 4 inches to 4 feet during the time of flowering. Mr. CALEY.] P. April.

SENE'CIO. *Recept.* naked: *down* hair-like, long: *calyx* conical, double; the scales as if dead at the ends.

(1) *Florets all tubular.* [S. viscosus.]

S. Leaves winged-indented, embracing the stem: flowers vulga'ris.
scattered.

Curt.–E. bot. 747–*Kniph.* 6–*Fl. dan.* 513–*Blackw.* 132–*Walc.–Trag.* 285–*Dod.* 641. 2–*Matth.* 1132–*Lonic.* i. 96. 2–*Lob. obs.* 112. 2, *and ic.* i. 225. 2–*Ger. em.* 278. 1–*Park.* 671–*H. ox.* vii. 17. 1–*Pet.* 17. 5–*Ger.* 217. 2–*Fuchs.* 286.

Cal. scales at the base spear-shaped, purplish black for about one third of their length. *Florets* all hermaphrodite. *Blossoms* yellow, terminating.

Common Groundsel. Simson. Cultivated ground, rubbish, and court yards. A. April—Sept.*

(2) *Strap-shaped florets in the circumference rolled back.*

visco'sus. S. Leaves wing-cleft, clammy: scales of the calyx loose, as long as the cup.

E. bot. 32–*Dill. elth.* 258. 336–*J. B.* ii. 1042.

In appearance and size resembling the S. *vulgaris*, but clammy all over from hairs which secrete a viscid liquor. *Leaves* in mountainous situations with a leprous scurf underneath. *Fruit-stalks* lateral, with 2 and 3 flowers. *Cal.* the scales at the base as long as the tube, as it were dead at the ends. LINN. *Rays* sometimes wanting. HALL. *Stem* taller and stronger; *leaves* more divided; *flowers* larger; *fruit-stalks* longer, the upper forming a kind of broad-topped spike; *seeds* longer, and more deeply furrowed; and the *down* longer than in S. *vulgaris*. Mr. WOODW. *Bloss.* yellow. The hairs on the cup and on every other part of the plant at once distinguish this from the S. vulgaris, even though the strap-shaped florets of the circumference should be wanting.

Clammy Groundsel. Sandy ground. Fen banks in the Isle of Ely. Waste ground near towns and villages, as the Leven on the coast of Fife, near the salt works, and at Dysart near the pier, and at Charles Town, the lime-works of Lord Elgin. LIGHTF. [King's Park, Edinburgh, Mr. YALDEN, under the Salisbury Craggs. ST.] A. Aug—Dec.

sylvat'icus. S. Leaves wing-cleft, finely toothed: stem branching into a corymbus; upright.

E. bot. 748–*Rupp. jen. Hall.* 3. *at p.* 177–*Dill. elth.* 258. 337–*Dod.* 641. 1–*Lob. ic.* i. 226. 2–*Ger. em.* 278. 2–*H. ox.* vii. 17. 2–*Pet.* 17. 6–*Fl. dan.* 869–*Ger.* 217. 1.

Stem taller, and more firm, though slenderer than that of S. *viscosus*. *Leaves* narrower, and more finely divided, frequently clammy in a hot sunny situation, but not so much so as those of S. *viscosus*. *Fruit-stalks* much more branched. *Flowers* more numerous, much smaller. *Seeds* shorter and broader. *Down* shorter, WOODWARD, strong-scented. *Stem* 2 to 3 feet high, with a fine woolliness of short, tapering, zigzag hairs, brittle, branching from the bottom. *Branches*, the upper rising nearly to the same height. *Leaves* somewhat woolly, with scattered short hairs, tapering but not tipped with glands. *Fruit-stalks* somewhat cottony. *Cal.* conical, somewhat woolly; scales at

* A strong infusion of the plant vomits. The bruised leaves are a good application to boils. The seeds are very acceptable to Linnets and Goldfinches, when confined in cages. Cows are not fond of it. Goats and swine eat it. Horses and sheep refuse it. LINN.—A horse eat it. ST.

the base awl-shaped, 2 to 3, dead at the ends, thrice as small as those of the cup. *Bloss.* full yellow. St. *Leaves,* edges rolled back. *Cal.* scales at the base few, short, slender, scarce sensibly dead at the ends. *Florets of the circumference* rolled back, close up to the cup.

Senecio viscosus β Huds. *Bushy Groundsel.* Banks, and mounds of earth in dry upland soil, dry heaths, and sandy ditch banks. [Ruddy Hill, near Mangots Field, Gloucest. Mr. Swayne. Lanes about Birmingham.] A. July.

(3) *Strap-shaped florets in the circumference expanding: leaves wing-cleft.*

S. tenuifolius. Leaves winged; segments strap-shaped; lower leaves on long leaf-stalks: flowers forming a corymbus: stem upright. Jacq.

Jacq. austr. 278–*E. bot.* 574.

Stem unbranched, 1 to 3 feet high, scored with ridges, firm, thick as a quill, entirely covered by the leaves; reddish, but cloathed with cobweb-like cotton. *Calyx* green, not dead at the ends. *Leaves* either smooth on both sides, or cloathed underneath with a cobweb-like cotton. *Lower* leaves on long leaf-stalks; *upper* leaves nearly sitting, and upright. *Segments* strap-shaped, pointed, mid-rib underneath protuberating; long, distant, very entire, rarely toothed; edges rolled back. Jacquin.

The figure of Jacquin is a very exact representation of it as it mostly appears in the north of England. It does occur with us in the state represented in the Fl. Lond. but it is but seldom, and seems to be a variety occasioned by a damper and more shady situation. Mr. Wood.

Var. 2. Plant but little cottony; lower leaves sitting; segments broader.

Curt. 294–*Pet.* 17. 3–*Walc.*

Stems 3 to 4 feet high, firm, cottony. *Leaves* hoary, but sometimes dark green above, and not hoary; segments strap-shaped, parallel, sharply toothed, terminating in a point; the segments nearly equal in breadth to the mid-rib. *Flowering-branches* forming a kind of corymbus. *Fruit-stalks* with several awl-shaped flower-scales. *Florets of the circumference* spear-shaped, pale yellow. Woodward. *Stem* angular, furrowed. *Leaves* sitting, hairy, particularly underneath; the lower rough to the touch; the upper less hairy; segments strap-shaped, and toothed at the ends. *Calyx,* scales not dead at the ends, but yellow and woolly, the outer strap-shaped, fleshy, the inner the same, but edged with a broad membranaceous border. The leaves in this variety do not stand upright as in the preceding, nor do they so effectually hide the stem; the segments are much broader, and the hairiness is not such as to give a hoary ap-

pearance to the plant. Upon the whole its habit is so different, that had there not been a general coincidence in opinion, that cultivation alone is sufficient to occasion the differences pointed out, I should have considered them as distinct.

Hoary Groundsel. Senecio erucæfolius. Huds. Curt. but not of Linn. as I understand from M. Afzelius, though he observes that all the synonyms, except *It. scan.* attributed to that, really belong to our plant. Woods and hedges. [Bath Hills, near Bungay, Suffolk. Mr. Woodward. Baydales, Darlington. Mr. Robson. Both varieties found near Blymhill. Shropsh. by the Rev. S. Dickenson.] P. Aug.

Jacobæ'a. S. Leaves lyre-shaped, almost winged: segments finely jagged: stem upright.

Kniph. 6–*Fl. dan.* 944–*Matth.* 1133–*Clus.* ii. 22. 1–*Dod.* 642–*Lob. obs.* 113, 2, *and ic.* i. 227. 1–*Ger. em.* 280. 1–*Park.* 668. 1–*Pet.* 17. 1–*Fuchs.* 742–*J. B.* ii. 1057. 1–*Trag.* 287–*Lonic.* i. 96. 3–*H. ox.* vii. 18. 1–*Ger.* 218. 1.

Florets in the centre 60, in the circumference 13. Relhan. *Stem* cylindrical, scored, generally smooth, often tinged with purple. *Leaves* doubly wing-cleft; wings variously lobed, and toothed, and sometimes again wing-cleft. *Bloxoms* deep yellow. Mr. Woodward. *Stem* often thinly sprinkled with a fine cotton. *Leaves* wing-cleft, almost winged; segments wing-cleft; lesser segments broader towards the end; with thin spread cotton here and there. *Cal.* scales 13, sometimes 15. *Florets* of the circumference 13. *Filaments* towards the end thickening into flat egg-shaped glands, disappearing as soon, or soon after the pollen is shed, rendering it probable that they are intended for the nourishment of the pollen. Sr.

Ragwort. Groundsel. Seggram. St. James's Wort. Meadows, pastures, and road sides. P. July.

Var. 2. Flowers without rays. Is so exceedingly like the preceding, that it cannot be considered as a different species. It is very common on the sand hills of Holland. Linn.

In great plenty in gravel on the sea shore, about 3 or 4 miles from Drogheda, scarcely one in a thousand being radiated. Sherard *in R. Syn.* Perhaps this variety is only the effect of the sea air, as it is well known how destructive that is to the more tender parts of vegetables.

Var. 3. Flowers without rays: whole plant hoary with a dense cottony substance.

Marazion Marsh, Cornwall. June.*

* If this plant is gathered before the flowers open, and used fresh, it dyes wool of a full green, but the colour is apt to fade. If woollen cloth

S. aquat'icus. Leaves toothed, those at the root egg-shaped, those of the stem wing-cleft; the outer segment largest. HUDS.

J. B. ii. 1057. 3–*Pet.* 17. 2–*Fl. dan.* 784–*Clus.* ii. 23. 1–*Ger. em.* 280. 3.

Stem cottony, purplish. *Root-leaves* on long leaf-stalks; *stem-leaves* sitting; the *uppermost* wing-cleft; wings toothed. *Corymbus* of few flowers. RELHAN. *Leaves* wing-cleft, with some small wings at the base, and a very large one egg-shaped, scolloped, terminating, smooth. *Fruit-stalks* irregularly branching, with numerous awl-shaped scales. WOODWARD. *Stem* quite smooth. *Leaves* quite smooth; *root-leaves* with the terminating leafit oblong. *Cal.* scales 15 to 21, dead as it were and brown at the points. *Florets of the circumference* about 21. *Filaments* thickening towards the end into oblong glands. ST.

This plant is liable to vary much in its foliage. I have some specimens in which the leaves are wing-cleft for more than half their length from the base; others in which the leaves may be most properly considered as entire, with 1 or 2 pair of wings on the leaf-stalk, and others again in which the upper and lower leaves have no wing-cleft segments; hence I am strongly induced to believe that this does not specifically differ from the S. Jacobæa, the latter growing in dry uplands, the former in moist meadows. Mr. Hudson's S. aquaticus certainly corresponds with the Linn. Sp. char. of the Jacobæa, which can hardly be said of the upland plant which we call Jacobæa.

Water Groundsel. Ditches and watery places, and moist meadows and pastures. P. July, Aug.

(4) *Strap-shaped florets in the circumference, expanding: leaves undivided.*

S. paludo'sus. Leaves sword-shaped, acutely serrated, a little woolly underneath: stem quite straight.

E. bot. 650–*Fl. dan.* 385–*Ger.* 347–*Ger. em.* 483. 6–*Pet.* 16. 8–*Thal.* 3–*J. B.* ii. 1063. 3–*Park.* 1232–*H. ox.* vii. 19. 22.

Leaves sometimes cottony on both sides. LINN. *Stem* 2 to 5 feet high, simple. *Leaves* very long, strap or spear-shaped, losing their woolliness by age. *Umbel* flat topped. *Flowers* 2 inches broad. *Cal.* conglutinated. HALL. *Blossom* yellow.

Bird's-tongue Groundsel. Marshy ditches and their banks in the Isle of Ely, near Stretham Ferry, but not common. P. Aug.

cloth is boiled in alum-water, and then in a decoction of the flowers, it takes a beautiful deep yellow. Horses and sheep refuse it. Cows are not fond of it, LINN. Horses and cows eat it when young.

saracen'icus. S. Flowers in a corymbus: leaves spear-shaped, serrated, almost smooth.

Jacq. austr. 186–*Kniph.* 4–*Ger.* 350–*Fuchs.* 728–*J. B.* ii. 1063. 2–*Trag.* 487–*Lonic.* i. 241. 3–*Dod.* 141. 1–*Lob. obs.* 159. 3, *and ic.* i. 299. 2–*Ger. em.* 429.

Distinguishable by its appearance, broad *leaves*, size, and *root* which creeps very much. LINN. *Leaves* rather toothed than serrated. *Floral-leaves* very slender; as long or longer than the partial fruit-stalk. Strap-shaped florets about 7 or 8. *Flowers* yellow.

Broad-leaved Groundsel. Moist meadows and pastures, and ditch banks. Between Wells and Glastonbury, and near Shipton-mallet, and elsewhere in Somersetshire. Near Halifax, in the fields about Salkeld; *R. Syn.* and about Clapham and Ingleton, Yorkshire. HUDS. [In the hedges near Longtown, and on the side of the river below Carlisle. Mr. JACKSON.]

P. July, Aug.*

AS'TER. *Recept.* naked: *down* hair-like: radiating florets more than 10: calyx tiled; the lowermost scales open.

(3) *Herbaceous. Leaves entire. Fruit-stalks naked.*

Tripo'lium. A. Leaves strap-spear-shaped, fleshy, smooth, 3-fibred: calyx scales blunt, somewhat membranaceous.

E. bot. 87–*Fl. dan.* 615–*Gmel.* ii. 80. 2–*J. B.* ii. 1064. 2–*Ger.* 333–*Dod.* 379–*Lob. obs.* 157. 4, *and ic.* i. 296. 1–*Ger. em.* 413. 1–*Park.* 674–*Pet.* 17. 10–*Lob. obs.* 158. 1, *and ic.* i. 296. 2–*Ger. em.* 413. 2–*Pet.* 17. 11–*H. ox.* vii. 22. 36.

Stems 1 to 3 feet high. *Leaves* fleshy. *Flowering-branches* from the bosom of the upper leaves. *Fruit-stalks* branched. *Cal.* scales in 2 or 3 unequal rows, short, egg-shaped, scored, green and brown, with reddish brown anthers. *Florets of the circumference* spear or strap-shaped, pointed, frequently cloven at the point, bright blue. WOODWARD. *Flowers* with somewhat of a sweetish scent. *Florets of the circumference* 21 to 23, of a bluish lilac. *Florets of the centre* fewer, about 18. *Seeds* of the female florets, but half the size of the others. ST.

Sea Starwort. Salt marshes on the sea coast, in a muddy soil, [and in salt marshes in the inland parts of the kingdom, as in a salt marsh near Shirley Wich, Staffordshire; in a meadow be-

* The *Phalæna, fuliginosa, Jacobæa*, and *picruba*, live upon the several species.

tween the Trent and the Canal. ST. West side of Walney island. Mr. ATKINSON. Shore of the Avon, a little above the Hotwell, Bristol, between the gravel walk and the river.]

P. Aug. Sept.*

Var. 2. All the florets tubular.

Pet. 17. 12.

About Bristol, frequent. RAY.

SOLIDA'GO. *Recept.* naked: *down* hair-like: *florets* of the circumference about 5: *calyx* scales tiled, laid close.

S. Stem serpentine, branched: leaves mostly sitting: flowers in crowded panicles. Virga-au'rea.

Var. 1. Stem branched: leaves strongly serrated.

E. bot. 301–*Ludw.* 150–*Sheldr.* 63–*Blackw.* 169–*Ger.* 348. 2–*Tabern.* 1260–*Pet.* 16. 10–*Dod.* 142. 2–*Lob. obs.* 159. 2, *and ic.* i. 299. 1–*Ger. em.* 430. 2–*H. ox.* vii. 23. *row* 1. 4.

Var. 2. Stem branched: leaves indistinctly serrated.

Fl. dan. 663–*Kniph.* 7–*Matth.* 1006–*Dod.* 142. 1–*Lob. obs.* 159. 1. *and ic.* i. 298. 2–*Ger. em.* 430. 1–*Ger.* 348. 1–*Pet.* 16. 9–*H. ox.* vii. 23. 20.

Root-leaves serrated. *Stem-leaves* sometimes serrated, but mostly entire. LINN. From 1 to 4 feet high. Lower leaves oval-spear-shaped, tapering into a leaf-stalk, distantly serrated, but towards the point almost entire, rough, slightly hairy, dark green above, sea green underneath, with a network of numerous veins; the upper alternate, nearly sitting, spear-shaped, entire, or nearly so. *Flowering branches* axillary, the lower shorter, the upper longer than the leaves, with 6 to 8 flowers on branched fruit-stalks. *Flower-scales* 1 or 2 on each fruit-stalk. *Calyx*, scales unequal, spear-shaped, with a green line along the back, and whitish, shining, membranaceous edges. *Seeds* brown, convex on one side, flat on the other, hairy the whole length, nearly as long as the calyx. WOODW. *Stem, leaves, calyx*, and tubular parts of the *florets* thick set with very short, opaque, white, bristly hairs. *Calyx* within of a silvery white, the outer scales much shorter. *Florets of the centre*, segments bent back. *Florets of the circumference* 6 to 8, bent back,

* Goats and horses eat it. Cows and swine refuse it. Sheep are not fond of it. LINN. May it not, when growing in an inland situation, be depended on as a proof of the existence of salt springs. ST.

with 4 or 5 faint longitudinal scores, and 3 or 4 teeth at the end. *Bloss.* yellow.

Common Golden-rod. Woundwort. Solidago Virga-aurea. Hort. Cliffort. Woods, hedges, heaths, copses. P. Aug. Sept.

Var. 3. Stem serpentine, unbranched: leaves spear-shaped: flowers in a spike-like terminating bunch.

Mountains near Kendal. Mr. Gough.

In all these varieties the degree of serrature on the leaves, as well as the length of the leaf-stalks, is very variable; but the stem in all is serpentine, ribbed, and cottony.

cam'brica. S. Stem straight, unbranched: leaves, spear-shaped, the upper nearly sitting, the lower on leaf-stalks as long as themselves: flowers in a panicle.

Dill. elth. 306. 393–*Pet.* 16. 11.

From 3 to 7 inches high. Flowers sometimes forming a corymbus, sometimes a compact spike-like bunch, but I have not seen the secondary fruit-stalks, branched, as in the S *Virga-aurea.* Cultivated it attains the height of 18 inches or more, but still preserves its straight unbranched stem and its great length of leaf-stalks. Specimens from Professor Thunberg, called *Virga-aurea,* agree with our *Cambrica,* which confirms an observation Mr. Afzelius made to me, that Linnæus in Hort. Cliffort. had erroneously placed this as a variety of the common S. *virga-aurea,* whereas it is the plant of the Flora Suecica, and really distinct from that of the Hort. Cliffort. which is our common species.

Solidago Virga-aurea. Fl. Suec. *Welsh-golden-rod.* Pastures on the top of y Glyder Mountain, in Wales. Lluyd Mountains about Llanberys, and on those of Yorkshire and Westmoreland. Huds. Llyn y Cwyn, near Snowdon. Pen. *Wales.* [On the rocky precipice on the summit of Ingleborough, to the North-west. Mr. Woodward. Near Kendal. Mr. Gough.]

P. July.

Lappo'nica. S. Stem straight, unbranched: root-leaves egg-shaped, on bordered leaf-stalks: stem-leaves spear-shaped, sitting: flowers in a spike-like terminating bunch and in the bosom of the upper leaves.

About 6 inches high. *Spike* containing about 10 flowers. Solidago, 306, Flor. Lapponica. I am indebted to Mr. Afzelius for the information that this Lapland plant had been found in Scotland, and I have now a specimen before me which I believe came from the mountains in Westmoreland.

CINERA'RIA. *Receptacle* naked: *down* hair-like: *calyx* single, many-leaved, equal.

C. palus'tris. Flowers in a corymbus: leaves broad-spear-shaped, tooth-indented: stem woolly.

E. bot. 151–*Fl. dan.* 573–*Gmel.* ii. 72–*Dod.* 52. 2–*Lob. ic.* i. 347–*Ger. em.* 483. 5–*H. ox.* vii. 19. 24–*Pet.* 16. 6–*Park.* 126. 3.

Leaves thick, cottony, and almost clammy, covering the stem quite up to the flowers; the lower cut and almost wing-cleft. LINN. *Stem* ½ to 2 feet high, thick, hollow, with a thick clammy long wool. *Leaves* varying extremely in form and manner of growth, clothed with the same wool as the stem, without order, sitting, or half embracing the stem, waved, sometimes barely toothed, those immediately beneath the corymbus entire. *Fruit-stalks* branching. *Floral-leaves* awl-shaped, one on each fruit-stalk. *Calyx*, scales nearly equal, spear-shaped, woolly, membranaceous at the edge. *Bloss.* pale yellow. *Florets of the circumference* oval, veined, with 2 or 3 teeth at the end, or entire; ¼ lines long, with a short narrow tube. *Florets of the centre* somewhat shorter. *Anthers* somewhat longer than the blossom. *Style* in the *hermaphrodite* longer than the stamens; in the *female* as long as the tube. *Seeds* small. *Down* as long as the tube of the blossom; rays few. WOODWARD.

Marsh Fleawort. Marshes in Lincolnshire. Fen-ditches about Marsh and Chatteress in the Isle of Ely; Caister near Yarmouth; about Pillinmoss, Lancashire; and Aberavon, Merionethshire. [About Yarmouth, Norfolk. WOODWARD.]

P. June, July.

Var. 2. Leaves not jagged. *R. Syn.* 174. n. 3. WOODW.

Lob. ic. i. 347. 1–*Ger. em.* 484. 8–*Park.* 126. 4–*H. ox.* vii. 19. *row* 2. 23–*Pet.* 16. 5.

Var. 3. Less woolly than var. 1. *Stem* slender, about 18 inches high. *Leaves* strap-spear-shaped, toothed, the lower about 4 inches long, the upper 2½ to 1½, and not more than 1-4th wide, not so numerous as in var. 1. *Flowers* smaller. *Fructification* perfectly similar.

Near Ramsey, Huntingdonshire. Mr. WOODWARD.

C. integrifo'lia. Flowers in a terminating umbel, with an involucrum at its base; leaves inversely egg-shaped, woolly, indistinctly toothed.

Jacq. austr. 180–*Fl. dan.* 1177–*Allioni* 38. 2–*E. bot.* 152–*Relh. at p.* 320–*Jacq. misc.* i. 17. 4–*Pet.* 17. 4.

Root fibrous. *Root-leaves* on leaf-stalks, spatula-shaped, obscurely toothed, cottony underneath; *stem-leaves* sitting, spear-shaped, cottony. *Stem* 3 to 6 inches high, simple, cottony, angular. *Flowers* 1 to 4; yellow. *Florets of the circumference*

10 to 15; *of the centre* numerous, prominent. *Calyx* furrowed, the edges skinny. *Seeds* hairy. *Down* simple. RELHAN. The size of this plant varies very much, as also does the number of its flowers. I have before me a specimen $2\frac{1}{2}$ inches high, with only 2 flowers, and another lately sent by Mr. Relhan 9 inches high, and with an umbel of 8 flowers. The fruit-stalk of the central flower but half the length of the others.

Mountain Fleawort. Cineraria alpina β LINN. *C. alpina.* Relh. *C. campestris.* Retz. Scand. p. 159. Hilly pastures. Gogmagog Hills, Newmarket Heath, the Devil's Ditch, and near Basingstoke and Andover. P. May, June.

INULA. *Receptacle* naked: *down* hair-like: *anthers* with 2 bristles at the base.

Hele'nium. I. Leaves embracing the stem, egg-shaped, wrinkled, cottony underneath: scales of the calyx egg-shaped.

Woodw. 108–*Kniph.* 7–*Blackw.* 473–*Ludw.* 59–*Dod.* 344–*Lob. obs.* 309. 1, *ic.* i. 574. 2–*Ger. em.* 793–*H. ox.* vii. 24. *row* 3. *fig. the last*–*Pet.* 16. 1–*Park.* 654–*Gars.*–*Ger.* 649–*Fl. dan.* 728–*Matth.* 71–*Fuchs.* 242–*J. B.* ii. *a.* 108–*Trag.* 170.

Stem 5 or 6 feet high, branched towards the top, scored, cottony. *Leaves*, the lower on leaf-stalks, spear-shaped; the upper egg-spear-shaped, serrated or toothed, deep green, slightly hairy above, whitish green and thickly cottony underneath. *Flowers* very large, solitary, terminating the stem and branches. *Calyx*, the outer egg-spear-shaped, like the leaves; the inner bluntly egg-shaped, cottony. *Bloss.* yellow. *Florets of the circumference* one to one inch and a half long, with 5 pointed teeth at the end. *Down* shorter than the florets. WOODWARD.

Common Elecampane. Moist meadows and pastures. In Essex, frequent; about St. Ive's, Cornwall, and Pugden, Huntingdonshire, between Denbighshire and St. Asaph. [Side of Bredon Hill, ascending from Great Comberton, Worcestershire. NASH. Ripton and Warboys, Huntingdonshire, the latter far removed from any house. Mettingham, Suffolk. Not uncommon in Norfolk. WOODW. In a pasture ground near Wick Cliffs. Mr. SWAYNE. Several places near Dalton, clearly in a wild state. Mr. ATKINSON.] P. July, Aug.*

* The root is esteemed a good pectoral. Dr. Hill says, he knows, from his own experience, that an infusion of the fresh root, sweetened with honey, is an excellent medicine in the Hooping Cough. A decoction of the root cures sheep that have the scab. Horses and goats eat it; cows, sheep, and swine refuse it.

I. Leaves embracing the stem, heart-oblong: stem woolly, forming a kind of panicle: scales of the calyx bristle-shaped. dysenter'ica.

Curt. 164–*Kniph.* 12–*Fl. dan.* 410–*Walc.*–*Matth.* 872–*Clus.* ii. 21. 1–*Dod.* 52. 1–*Lob. obs.* 187. 1, *and ic.* i. 345. 2–*Ger. em.* 482. 3–*Pet.* 16. 2–*H. ox.* vii. 19. 7–*Fuchs.* 436–*J. B.* ii. 1050. 1.

Calyx, scales awl-shaped, soft, bowed back, coloured at the edge. LINN. *Stem* upright, cylindrical, scored, cottony, branched towards the top. *Leaves* spear-shaped, obscurely toothed, arrow-shaped at the base, cottony on both sides. *Flowers* terminating the stem and branches, solitary. *Calyx*, scales numerous, cottony. *Bloss.* yellow. *Florets of the circumference* with 3 teeth at the end. *Down* as long as the tube of the blossom. WOODW. Bristles at the base of the anthers very minute. *Seeds* rough with short bristles. *Receptacle* rough with short, stiff, projecting, spear-shaped points.

Middle Elecampane. Flea-bane. Moist meadows and pastures, watery places, sides of brooks and rivulets. P. Aug.—Oct.*

I. Upper-leaves embracing the stem, strap-spear-shaped, blunt: stem upright: calyxes cylindrical. cylin'drica.

Dicks. h. s.–*Curt.* 156–*Sheldr.*–*Fl. dan.* 613–*Blackw.* 103–*Ger.* 390. 2–*Trag.* 166–*Lonic.* i. 131. 3–*Dod.* 52. 3–*Lob. obs.* 187. 2, *and ic.* i. 345. 1–*Ger. em.* 482. 4–*H. ox.* vii. 20. 30–*Pet.* 16. 3.

Stem cylindrical, scored, smooth, crooked, often tinged with purple, much branched. *Leaves*, the lower sitting; upper embracing the stem, spear-shaped, waved at the edge, slightly hairy and cottony. *Flowers* numerous, solitary. *Calyx*, *scales* numerous, awl-shaped, woolly; the lower spreading. *Bloss.* yellow. *Florets of the circumference* with 3 teeth at the end; often wanting. *Down* shorter than the florets; rays few. WOODW. *Stem* upright, not prostrate. *Flowers* broad, short, cylindrical. Bristles on the anthers very minute, and much shorter than the filaments. *Down* shorter than the seed.

Small-flowered Elecampane. Small Fleabane. I. uliginosa. Fl. ox. *I. Pulicaria.* Huds. and other English authors, but not of Linnæus. Mr. Afzelius informs me that the Swedish plant is very trailing, not at all hairy; but our plant always grows

* It has a peculiar scent, compared by some to that of soap. The Russian soldiers, in the Persian expedition under General Keit, were much troubled with the bloody flux, which was cured by the use of this plant. Cows are not fond of it; goats and sheep refuse it. LINN. A horse eat it, but it is generally left untouched. ST.

upright, and the upper part of the stem, the fruit-stalks, and the leaves, are woolly. The calyx in our plant is cylindrical, in the Swedish plant globular. It is probable that the reference to Dod. 59, given in the Fl. Suecica, misled the other European botanists, for that is undoubtedly our plant. Linnæus marks a var. of his I. Pulicaria β as a larger and more rigid plant than α, referring to Pluk. 384. 2; but this plant of Plukenet's is much smaller than ours, though larger than the plant of Linnæus.

Road sides, and where water has stagnated during the winter. [About Wishaw near Coleshill.] Aug.—Oct.

erithmoi'des. I. Leaves strap-shaped, fleshy, generally 3-pointed.

E. bot. 68–*J. B.* ii. *a.* 106. 3–*Dod.* 706. 1–*Lob. obs.* 215. 1, *and ic.* i. 395. 2–*Ger. em.* 533. 3–*Park.* 1287–*H. ox.* vii. 21. 16–*Pet.* 17. 9–*Matth.* 491–*Ger.* 427. 3.

Stems firm, smooth, scored, much branched. *Leaves* at the ends of the branches crowded. *Flowers* solitary, terminating the upper branches. *Fruit-stalks* thick. *Calyx*, scales numerous, awl-shaped, fleshy, yellowish green. *Seeds* woolly. *Down* shorter than the florets; rays few, when viewed with a glass finely toothed on one side. Woodward. *Lower-leaves* with teeth at the end, and sometimes a little toothed at the sides; upper ones entire. *Bloss.* yellow.

I. erithmoides. Sp. pl. and Huds. *Golden Samphire. Samphire Elecampane.* Salt marshes on the sea coast, in a muddy soil. P. Aug.

DORO'NICUM. *Recept.* naked: *down* hair-like: calyx scales in 2 rows; equal, longer than the blossoms: *seeds* of the circumference downless and naked.

Pardalian'ches. D. Leaves heart-shaped, blunt, finely toothed; root-leaves on leaf-stalks; stem-leaves embracing the stem.

Jacq. austr. 350–*E. bot.* 630–*Ludw.* 57–*Kniph.* 2–*Blackw.* 239–*Clus.* ii. 19–*Ger. em.* 762–*Park.* 321. 7.–*H. ox.* vii. 24. 4–*Mill.* 128–*Gars.* 15.

Stem branched. *Seeds of the circumference* naked. Linn. *Bloss.* yellow.

Great Leopard's-bane. Wolf's-bane. About Hoddam Castle, Annandale, and several other places in the Lowlands. Lightf. Near the world's end, Harrogate. Mr. Manby.—[Near Duplin House. Sr.—Banks of the Severn below Bridgnorth.] P. May, June.

BEL'LIS. *Recept.* naked, conical: *down* none: *calyx* hemispherical, with equal scales: *seed* inversely egg-shaped.

B. Stalk naked. peren'nis.

Curt.–*E. bot.* 424–*Kniph.* 1–*Fl. dan.* 503–*Walc.*–*Blackw.* 200–*Ludw.* 184–*Matth.* 912–*Dod.* 265. 1–*Lob. obs.* 252, 2, *and ic.* i. 476. 1–*Ger. em.* 636. 5–*Pet.* 19. 2–*Ger.* 510. 4–*H. ox.* vi. 8. 26–*Ger.* 510. 3–*Ger. em.* 636. 4–*Park.* 530. 11–*H. ox.* vi. 8. 29–*Fuchs.* 147–*Trag.* 161.

Stalk with 1 flower. LINN. *Stalk* hairy, solid at the bottom, hollow at the end, sometimes with a few leaves. RELHAN. *Florets of the circumference* notched at the end. Mr. WOODW. and tipt with a fine carmine. *Leaves* oblong, blunt, notched, spread upon the ground. *Florets* in the centre yellow, those in the circumference white above, pink beneath.

Common Daisy. Meadows and pastures. P. March—Sept.*

Var. 2. Flower herbaceous, globular.
In Mr. Selden's copse near his house in Worcestersh. RAY.

CHRYSAN'THEMUM. *Recept.* naked: *down* none, but a kind of border: *calyx* hemispherical, tiled; scales membranaceous at the edge.

(1) *Florets of the circumference white.*

C. Leaves embracing the stem, oblong; serrated upwards, toothed at the base. Leucan'themum.

E. bot. 601–*Ludw.* 183–*Kniph.* 6–*Curt.* 348–*Fl. dan.* 994. *Sheldr.* 6–*Matth.* 910–*Dod.* 265. 3–*Lob. obs.* 253. 2, *and ic.* i. 478. 1–*Ger. em.* 634–*Park.* 528. 1–*Walc.*–*Ger.* 509–*Fuchs.* 148–*J. B.* iii. *a.* 114. 2–*Trag.* 144. 1–*Lonic.* i. 89. 1–*Pet.* 19. 1–*Blackw.* 42–*H. ox.* vi. 8. 1. *f.* 2.

Seeds black, with white scores, and crowned with a yellow cylindrical head. LINN. *Root-leaves* on leaf-stalks; *stem-leaves* sitting. *Flower* large. *Florets of the centre* yellow; *of the circumference* spear-shaped, with mostly 3 teeth. RELHAN. *Stem* upright, scored, simple, or with few branches. *Leaves*, the up-

* The leaves are slightly acrid. The roots have a penetrating pungency. No attention is paid to it, except what it claims from the beauty of its flowers. The flowers close at night. Horses, sheep, and cows refuse it. LINN.

per sometimes embracing the stem, oblong-wedge-shaped or spear-shaped, serrated, sometimes toothed, and even wing-cleft at the base. *Flower* 1, terminating the stem, and principal branch. *Cal.* scales spear-shaped, unequal. *Florets of the circumference* sometimes entire. Mr. Woodw. *Cal.* outer scales green, edged with brown, the inner with the addition of a skinny membranaceous border.

Greater Daisy. Ox-eye. Moon-flower. Daisy Goldins. Dry meadows, pastures, and walls. P. June, July.*

inod'orum. C. Leaves winged, many-cleft: stem branched, spreading.

E. bot. 676–*Fl. dan.* 696–*Pet.* 19. 12–*Fuchs.* 144–*J. B.* iii. *a.* 120. 2.

Its calyx being skinny at the edge occasions it to be associated with the *Chrysanthema*. This obscure plant is readily distinguishable from *Anthemis Cotula*, which it very much resembles, as also *A. arvensis*, by the want of chaff on the receptacle; and from *Matricaria Chamomilla* by its flattish calyx; its scales brown and uneven at the edge; its receptacle hemispherical, not conical; the rays of the blossom expanding, not bent down; and its flowers being thrice as large. Linn. *Stem* much branched, smooth, scored, sometimes purplish. *Leaves*, wings distant, twice or thrice divided, the extreme segments thread-shaped; mid-rib broad; membranaceous, and somewhat embracing the stem at the base, narrowing upwards. *Flowers* large, terminating. *Florets of the circumference* nearly strap-shaped, 8 to 9 lines long; *of the centre* greenish at the base, yellow above; segments spear-shaped, expanding. *Receptacle* conical. *Seeds* brown, lopped at each end, with 4 whitish prominent angles. Woodward. *Seeds* with a brownish red circular gland in each corner at the top, resembling the eyes of some insects; the 2 inner sides concave; the angles sharp, prominent, and whitish, crowned at the top with a very shallow, whitish membranaceous border. Sr. *Calyx* the middle row of scales the largest, all more or less membranaceous and skinny. *Florets of the circumference* bent back, 20 or more; those in the centre very numerous, yellow.

Chamomile Goldins. Matricaria inodora. Fl. suec. and Huds. which see. Cornfields and road sides. A. July—Sept.

Var. 2. *maritimum.* Outer scales of the calyx with finger-like divisions; inner ones fringed at the edge.

Only about 4 inches high, but in other respects agreeing with the preceding.

On the Beach at Weymouth. May, 1794.

* The young leaves may be eaten in sallads. Horses, sheep, and goats eat it. Cows and swine refuse it.

(2) *Flowers entirely yellow.*

C. Leaves embracing the stem, jagged upwards, tooth- se'getum.
serrated towards the base.

Dicks. h. s.–E. bot. 540–*Fl. dan.* 995–*Clus.* i. 334. 2–*Dod.* 263. 1–*Lob. obs.* 298. 2, *and ic.* i. 552. 1–*Ger. em.* 743, 1–*Park.* 1370. 1–*H. ox.* vi. 4. *row* 2. 1–*Pet.* 19. 6–*Trag.* 144. 2–*Lonic.* i. 89. 1.

Stem upright, scored, smooth, branched. *Leaves* sea-green, varying in figure, as wedge-strap or spear-shaped, distantly serrated towards the base, usually deeply toothed or jagged, with frequently 3 clefts at the end. *Flowers* very large, terminating. *Cal.* scales oval, blunt, sea-green, with membranaceous edges. *Florets of the circumference* oval, about half an inch long *Seeds* slightly serrated, whitish. Mr. Woodw. Whole *plant* smooth. *Leaves*, segments terminated by a little projecting point. *Florets of the circumference* egg-shaped. *Summits* in the female flowers frequently 3.

Corn Marigold. Goulans. Goldins. Marigold Goldins. Buddle in Norfolk. Mr. Woodward.—Cornfields. [An extremely troublesome weed in the Norfolk turnep fields in a sandy soil. Mr. Woodward.] A. June—Oct.*

MATRICA'RIA. *Recept.* naked: *down* none: *calyx* hemispherical, tiled; scales rather pointed, not skinny at the edge.

M. Leaves compound, flat; leafits egg-shaped, cut: fruit- parthe'nium.
stalks branched.

Ludw. 192–*Kniph.* 5–*Gars.* 368–*Blackw.* 192–*Woodv.* 249–*Fuchs.* 45–*J. B.* iii. *a.* 129–*Dod.* 35. 2–*Lob. obs.* 433–1, *and ic.* i. 751. 1–*Ger. em.* 652. 1–*Park.* 83. 1–*Pet.* 19. 5–*Matth.* 907–*H. ox.* vi. 10. 1–*Ger.* 526–*Fl. dan.* 674–*Lonic.* i. 151. 2–*Trag.* 156.

Stem 3 feet high, firm, scored, slightly hairy. *Leaves* alternate, slightly hairy; *leafits*, 2 or 3 pair, oval, jagged, a large one terminating, wedge-shaped, with 3 lobes, the middle one of which

* It was imported into Sweden along with corn from Jutland, about the end of the sixteenth century. In Denmark there is a law to oblige the farmers to root it up from their cornfields. It may be destroyed by dunging the ground in autumn, followed by a summer fallow, and harrowing the land about five days after sowing the grain. Its yellow flowers, however, which follow the sun in a very remarkable manner, give a brilliancy to the fields in tillage, and please the eye of the passing traveller. Linn.—A large quantity, which grew on some arable land, was cut when in flower, dried, and eaten by Horses as a subsitute for Hay. Mr. Holleffar.—It is used by the Germans for dying yellow.

is 3-cleft, the side ones scolloped. *Flowers* solitary. *Fruit-stalks* thickest just beneath the flower, hairy, mostly branched. *Cal.* scales oval. *Florets of the circumference* wedge-shaped; white; *those of the centre* yellow. *Seeds* egg-shaped, lopped at the base, deeply furrowed, whitish. WOODWARD. *Stems* angular, scored. *Leaves* wing-cleft; *leafits* oblong or egg-shaped, deeply divided into about 5 segments, and these again cut and jagged, when magnified appear as if sprinkled with minute spangles. *Cal.* inner scales skinny and ragged at the edges. *Florets of the circumference* egg-shaped; *those of the centre* crooked, sprinkled with minute shining particles; only yellow at the top. *Flowers* sometimes double.

Common Feverfew. Waste places, hedges, and walls. P. June, July.*

marit'ima. M. Receptacles hemispherical: leaves doubly winged, somewhat fleshy; convex above, keeled underneath.

Ray 7. 1. at p. 188.

Root woody, running deep, apparently perennial. *Stems* reclining, darkish purple, smooth, firmer and stronger than those of *Anthemis nobilis*, and forming a fuller turf, but not creeping or spreading so wide. *Leaves* thicker and shorter, shining, dark green. *Flowers* several on a stem. DILL. *in R. Syn.* 180. *Florets in the centre* yellow; *those of the circumference* white.

Matricaria inodora γ HUDS.—*Sea Feverfew.* Sea coast, in sandy soil. On the coast of Sussex, and very plentifully at Cockbush, 7 miles from Chichester. DILL.—Island of Bute, the Western side of Cantire, between Machrianish and Barr. LIGHTF. —[Rocks at Down, near Bamff, in Scotland. Dr. SMITH.—Isle of Walney. Mr. ATKINSON.] P. July.

Chamomil'la. M. Receptacles conical; rays expanding: calyx scales equal at the edge.

Kniph. 9–*Ludw.* 131–*Curt.* 331–*Blackw.* 67. 1–*Sheldr.* 33–*Dod.* 257. 2–*Lob. obs.* 445. 1, *and ic.* i. 770. 1–*Ger. em.* 754. 1–*Park.* 85. 1–*Blackw.* 298–*Fuchs.* 25–*J. B.* iii. *a.* 116–*Trag.* 148–*Matth.* 905–*Lonic.* i. 90. 2–*H. ox.* vi. 12. 7–*Pet.* 19. 9.

Stem scored, branched. *Leaves* doubly winged, the upper often simply winged; wings distant; little wings with 2 or 3 clefts; leafits strap-shaped, of an equal breadth with the mid-rib. *Flowers* solitary, terminating. *Cal.* scales bluntly spear-shaped, hairy, membranaceous at the edge, with a green line along the back. *Florets of the circumference* white, nearly strap-shaped, at

* The whole plant has a strong smell, and a bitter taste, and yields an essential oil by distillation. A horse refused it. ST.

first expanding, afterwards bent back; *those of the centre* yellow. *Receptacle* almost cylindrical, dotted. WOODWARD. *Leaves* more than doubly compound, with slender segments. *Seeds* numerous, minute, pale brown, furrowed. CURT.

Chamomile Feverfew.

Var. 2. *suaveolens.* Receptacle conical, rays bent downwards: calyx scales equal at the edge.

Ger. 15. 1.

Sweet-scented Feverfew. Matricaria Chamomilla β Huds. *Matricaria suaveolens.* LINN. Cornfields, cultivated ground, dung-hills, and road sides. A. May – Aug.*

ANTHEMIS. *Recept.* chaffy: *down* none: *calyx* hemispherical, scales nearly equal: *florets* of the circumference more than 5.

(1) *Rays white.*

A. Receptacles conical: chaff bristle-like: seeds crowned with a border. arven'sis.

E. bot. 602–*Fl. dan.* 1178–*Kniph.* 11–*Tabern.* 70. 1–*Pet.* 19. 8.

Plant hoary. Stems spreading. Chaff spear-shaped. *Root* biennial. It has the habit and size of the Anth. Cotula, but the stems spread more, the fruit-stalks are longer, less scored, the grooves being only 4 or 5, but in the A. Cotula about 8. The leaves are more of a grey green, and scentless. The inner scales of the calyx are broad and membranaceous at the end, not so in the Cotula. The chaff in this is spear-shaped, in the other slender as a bristle: the apex of the seed is crowned with a 4-sided border as in the Matricaria Chamomilla, but in the Anth. Cotula the seed has no such crown. LINN. *Stem* branched immediately above the root, scored, slightly hairy, pale green, with sometimes a tinge of red. *Branches* generally naked upwards. *Leaves* sitting, winged; mid-rib broad; wings either winged, or only jagged, sea-green. *Flowers* terminating. *Fruit-stalks* hairy, and somewhat thicker beneath the calyx. *Cal.* scales oval, with an awl-shaped green line along the back, somewhat hairy; edges membranaceous. *Florets of the circumference* white, somewhat elliptical, with 2 or 3 teeth, 4 or 5 lines long; *those of the centre* with a greenish tube, swelling upwards; border yellow, bent back. *Chaff* spear-shaped, very much pointed, somewhat keeled,

* Its properties resemble those of *Anthemis nobilis.* The Finlanders use an infusion of it in consumptive cases. Cows, goats, and sheep eat it. Horses are not fond of it. Swine refuse it.

as long as the florets. *Seeds* quadrangular, smooth, slightly furrowed, narrowest at the base, crowned with a blunt margin. Mr. Woodw. Whole *plant* slightly woolly. *Stems* numerous, ascending, cylindrical, slightly scored, branched towards the top. *Leaves* winged; *leafits* wing-cleft, and these again cut into 2 or 3 narrow segments, terminated by semi-transparent, conical, sharp points.

Cotula alba. Cotula non fœtida. Oculus bovis. Bupthalmum Dod. pempt. 259, is the plant here described.

Corn Chamomile. Gravel pits in Peckham Fields, and in the barren stubble fields between Eltham and Shooter's-hill. Ray.—Corn and fallow fields. Huds.—Cornfields and way sides, in gravelly soils. Parsons in *Fl. Scot.*—[Pastures about Affcote and the Stewponey, near Stourbridge, Worcestershire. St.—Cornfields in Norf. Woodward.] B. June, July.

Var. 2. All the florets narrow.

Cotula non fœtida, flore pleno. R. Syn. 186. St. James's field on the upper side near the highway, and at Great Strickland, Westmoreland. *R. Syn.*

Co'tula. A. Receptacles conical: chaff bristle-shaped: seeds naked.

Curt. 329–*Fl. dan.* 1179–*Dod.* 258–*Lob. obs.* 447. 1, *and ic.* i. 773. 2–*Ger. em.* 757. 1–*Park.* 87. 9–*H. ox.* vi. 12. 8–*Fuchs.* 583–*J. B.* iii. *a.* 121. 1–*Blackw.* 67–*Gars.* 216–*Pet.* 9. 11–*H. ox.* vi. 12. 10.

Fruit-stalks with about 8 scores. *Cal.* scales by no means widening towards the point, and scarcely membranaceous. *Chaff* very minute, like a fine bristle. *Seeds* not crowned with the 4-cornered edge, but terminated by a simple pore. Linn. *Plant* palish green. *Stem* slightly downy. *Leafits* often cloven towards the end. *Petals* hanging down, and continuing in that state till morning. Curt. *Stem* upright, branched upwards. *Branches* alternate. *Leaves* doubly or trebly winged, green. *Flowers* solitary, terminating. *Cal.* scales spear-shaped. *Chaff* shorter than the florets. *Seeds* with many warty angles. Mr. Woodw. *Leaves* smooth. Outer florets white, 3-toothed; central florets yellow.

Stinking Chamomile, or *Mayweed*, or *Mathen.* Cornfields, road sides, and borders of dunghills. A. May—Aug.*

Var. 2. *double-flowered.* All the florets narrow.

* Toads are said to be fond of this plant. It is very ungrateful and displeasing to bees. Goats and sheep are not fond of it. Horses, cows, and swine refuse it. Linn. It frequently blisters the skin of reapers and of children who happen to gather it. The heads, rubbed between the fingers, smell intolerably disagreeable. The larvæ of the *Cassida viridis* feed upon it. Curt.

Cotula fœtida flore pleno. R. Syn. St. Fields between Hitchin and the Bald Oak, in the Isle of Thanet, and between Gillingham and Chatham. *R. Syn.*

A. Leaves winged compound, strap-shaped, acute, some- nob'ilis.
what woolly.

Woodv. 103–*Kniph.* 9–*Ludw.* 155–*Blackw.* 298. 1–*Gars.* 215. *a. and* 4 *on the right hand*–*Dod.* 260. 1–*Lob. obs.* 445. 2, *and ic.* i. 770. 2–*Ger. em.* 755. 4–*Blackw.* 526–*Trag.* 149–*Ger.* 616. 4–*J. B.* iii. 118–*Pet.* 19. 10.

Stems trailing, hairy. *Leaves* doubly winged ; wings rather distant ; little wings sometimes with 2 or 3 clefts, pointed, hairy, greyish. *Flowers* solitary. *Calyx* hairy, with broad, shining, membranaceous edges. *Florets of the circumference* somewhat elliptical, either entire, or with 2 or 3 teeth ; *those of the centre* yellow. Mr. Woodw. *Summits* in the female florets sometimes 3. *Chaff* oblong-egg-shaped, like the scales of the calyx, but more skinny and more hairy.

Common Chamomile. Sweet-scented Chamomile. Roman Chamomile. Boggy pastures. In Cornwall so plentifully that you may scent it all along as you ride. Ray. Sunny meadows and pastures. Huds. [On the green at Pengwary, Redruth, and other old common pastures in the western part of Cornwall, where it is much finer scented than in gardens. Mr. Watt. Park at Oatlands, Surry. Mr. Woodward. On the road from Hedgeford to Stafford, near the direction post, plentiful. Mr. Pitt.] P. Aug. Sept.

Var. 2. *nudum.* Florets of the circumference wanting.

Dod. 260. 2–*Lob. obs.* 446. 1, *and ic.* i. 771. 2–*Ger. em.* 754. 2–*Park.* 86. 2–*J. B.* iii. *a.* 119. 2–*H. ox.* vi. 12. 3–*Ger.* 615. 2.

Chamæmelum luteum capitulo aphyllo. R. Syn. 185. St.*

A. Leaves winged, finely toothed, fleshy, naked, dotted : marit'ima.
stem prostrate : calyx somewhat cottony.

Kniph. 10–*J. B.* iii. *a.* 122. 1–*Till. pis.* 19. 3.

* The leaves and flowers have a strong, not ungrateful smell, and a bitter nauseous taste. They afford an essential oil. An infusion of the flowers is often used as a stomachic, and as an antispasmodic. In large quantities, it excites vomiting. The powdered flowers, in large doses, have cured agues, even when the bark had failed. Both the leaves and flowers possess very considerable antiseptic properties, and are therefore used in antiseptic fomentations, and poultices. From their antispasmodic powers, they are frequently found to relieve pain, either applied externally, or taken internally. Ray recommends the flowers in calculous cases

Stems widely prostrate, smooth, purplish. *Leaves* winged, cut, naked, sprinkled with hollow dots, more closely toothed towards the base, with a purplish, elevated, transverse line beneath the base. *Fruit-stalks* terminating, solitary, somewhat scored, downy, thicker above. *Flowers* of the scent of M. *Parthenium*. Linn. *Florets in the centre* yellow.

Sea Chamomile. Meadows on the sea coast. P. July, Aug.

(2) *All the florets yellow.*

tincto'ria. A. Leaves doubly winged, serrated, cottony underneath: stem supporting a corymbus.

Kniph. 12–*Blackw.* 439–*Fl. dan.* 741–*Ger.* 607. 3–*Matth.* 909–*Barr.* 465–*Clus.* i. 332. 2–*Ger. em.* 747–*Pet.* 19.7 –*Fuchs.* 26–*J. B.* iii. *a.* 122. 2–*Trag.* 152–*Gars.* 419.

Stem scored, slightly hairy, much branched. *Leaves*, the *lower* winged; *wings* spear-shaped, toothed, slightly hairy and green above, sea-green underneath; the lower wings short, distant, toothed; the upper wings wing-cleft; mid-rib broader than the wings; the *upper-leaves* wing-cleft; mid-rib broad, toothed; wings irregular, strap-spear-shaped, toothed; the *uppermost leaves* sometimes simply toothed. *Fruit-stalks* long, naked, scored, slightly hairy, terminating the stem and branches, each with 1 flower. *Cal.* tiled; scales numerous, the outer of various lengths, spear-shaped, hairy, with a green line along the back, white and shining at the edge. *Florets of the circumference* broad, with 3 teeth. Mr. Woodward. *Stems* scored, woolly. *Leaves* winged; *leafits* with winged clefts; the segments tapering, finely pointed. *Cal.* hollowed on the under side round the fruit-stalk, woolly. *Bloss.* yellow.

Oxe-eye. Chamomile. Sunny pastures, but not common. On a bank near the river Tees, not far from Sockurn, Durham. *R. Syn.* But Mr. Robson informs me it is not now to be found there. P. July, Aug.*

ACHILLE'A. *Recept.* chaffy: *down* none: *calyx* egg-shaped, tiled: strap-shaped florets from 5 to 10.

Ptar'mica. A. Leaves strap-spear-shaped, embracing the stem, finely serrated.

* The flowers afford a remarkably clear and good yellow dye. The flowers of the *Chrysanthemum segetum* resemble them much in appearance, but experience proves they cannot be substituted in their place. Horses and goats eat it. Sheep are not fond of it. Cows and swine refuse it.

Curt. 343–*E. bot.* 757–*Kniph.* 5–*Ludw.* 118–*Walc.*–*Fuchs.* 639–*J. B.* iii. *a.* 147–*Trag.* 159–*Lonic.* i. 235. 2–*Pet.* 19. 3–*Fl. dan.* 643–*Gars.*–*H. ox.* vi. 12. *row* 3. 1. *f.* 1 –*Blackw.* 276–*Clus.* ii. 12. 1–*Dod.* 710. 1–*Lob. obs.* 243. 3, *and ic.* i. 455. 2–*Ger. em.* 606. 1–*Ger.* 483. 1–*Park.* 859. *f.* 1–*Matth.* 585.

Stems 1 to 2 feet high, firm, somewhat angular, smooth, often reddish. *Leaves* upright, scattered, sitting, firm, smooth, strap-spear-shaped, dark green, serratures very minute. *Fruit-stalks* somewhat cottony, with or without a floral-leaf. *Cal.* scales spear-shaped, keeled, cottony, bright green; edges membranaceous and reddish brown. *Florets of the circumference* oval, broad, with 3 teeth, and a short tube; *those of the centre* very short, dirty yellow. Mr. Woodw. *Stems* angular, somewhat woolly. *Leaves* half embracing the stem; ends of the serratures white, and almost of a bony hardness. *Cal.* scales woolly without, brownish and skinny at the edges. *Florets of the circumference* rarely more than 12; *those of the centre* numerous. *Chaff* woolly.

Sneeze-wort. Yarrow. Goose-tongue. Bastard Pellitory. Moist meadows and shady places, [and balks of cornfields. Sr.] P. July, Aug.

Var. 2. Flowers double.

Clus. ii. 12. 2–*Ger. em.* 606. 2.

Leaves truly spear-shaped, serratures deeper, as in the figures of *H. ox. Dod.* &c. Mr. Woodward. All the florets, except a few in the very centre, strap-shaped.

Small Holme Island in Winander-mere, and at Chilmark, Wiltshire. *R. Syn.* [At Ripton. Found by Mr. J. Whitelocke, nurseryman at Fulham. Mr. Woodward.]*

A. Leaves doubly winged, segments of the wings strap-shaped, toothed. Millefolium.

E. bot. 758–*Kniph.* 5. *and* 7–*Ludw.* 67–*Fl. dan.* 737–*Woodv.* 61–*Anders*–*Blackw.* 18–*Clus.* i. 331–*Dod.* 100. 2–*Lob. obs.* 431. 1, *and ic.* i. 747. 2–*Ger. em.* 1072. 2–*H. ox.* vi. 11. 14–*Pet.* 19. 4–*Ger.* 914. 2–*Lonic.* i. 240. 1–*Gars.* 388–*Ger.* 914. 1–*Fuchs.* 727–*J. B.* iii. *a.* 136–*Trag.* 477–*Matth.* 1142–*Dod.* 100. 1–*Lob. obs.* 430. 2, *and ic.* i. 747. 1–*Ger. em.* 1072. 1–*Park.* 694. 1–*H. ox.* vi. 11. 6–*Matth.* 1141.

* The roots have a hot biting taste. The young tops are sharp and pleasant in spring sallads. The powdered leaves excite sneezing. Horses, cows, sheep, goats, and swine eat it.

Stem angular, cottony. *Fruit-stalks* cottony. Mr. Woodw. *Leaves* woolly, segments toothed. *Flowers* in a corymbus. *Bloss.* white, or reddish purple. *Cal.* scales woolly, skinny at the edges. *Florets of the circumference*, 5; *border* nearly circular, bent back, slightly cloven into 3; *those of the centre* 15 or more, but not more than 4 or 5 expanding at once. Linnæus says the leaves are smooth, but in all that I have examined, they are either woolly or hairy.

Var. 2. Blossoms purplish red; sometimes nearly crimson.

Yarrow. Millfoil Yarrow, Meadows, pastures, and road sides. P. June—Aug.*

FRUSTRANEA.

CENTAURE'A. *Recept.* bristly: *down* either feathered or hair-like: *florets of the circumference* funnel-shaped, irregular, longer than the others.

(1) *Scales of the calyx serrated with fringe.*

Cy'anus. C. Calyx scales serrated: leaves strap-shaped, very entire; the lower ones toothed.

Curt.–Fl. dan. 993–*E. bot.* 277–*Kniph.* 6–*Ludw.* 55–*Sheldr.* 44–*Blackw.* 270–*Walc.–Dod.* 251. 1–*Lob. obs.* 296. 1, *and ic.* i. 546. 2–*Ger. em.* 732. 2–*Park.* 482. 2–*Pet.* 22. 4–*Fuchs.* 428–*J. B.* iii. 21. 3–*Ger.* 592. 2–*Trag.* 56–*Lonic.* i. 182. 1–*Matth.* 508–*H. ox.* vii. 25. 4.

Blossoms blue, sometimes white, rose-coloured or purple. Linn. *Leaves*, the lowermost sometimes very entire. Mr. Hollefear. *Stem* 1 to 2 feet high, angular, firm, slightly cottony, branched upwards. *Leaves* numerous, whitish and cottony underneath, with 3 parallel ribs. *Branches* with 1 flower. *Cal.* scales spear-shaped, the outer green, tinged with purple, cottony, sharply serrated; serratures smooth, skinny, purplish without, white within, sometimes white on both sides; the inner entire. *Florets of the circumference*, segments spear-shaped, pointed; *those of the centre*, segments rather shorter than the anthers. *Pistil* in the florets of the circumference none. *Summit*, in the hermaphrodites triangular, purplish, rather shorter than the anthers. *Down* short, hair-like. Mr. Woodward. *Stem* angular, with

* The flowers yield an essential oil. The leaves are celebrated by the Materia Medica writers for a variety of purposes, but they are little attended to at present. Sheep and swine eat it. Horses, cows, and goats are not fond of it.

small tufts of white wool. *Leaves* with 3 ribs. *Cal.* edged with brown, skinny, spear-shaped teeth. *Hermaphrodite florets*, the border filled with a honey-like juice. *Filaments* surrounded just below the anthers with a fringe of silvery glandular hairs. *Anthers* almost black, horny at the top. *Style* a little hairy just beneath the summit. *Summit* cloven. *Bloss.* generally a fine bright blue, sometimes white, and sometimes a beautiful purple.

Blue-bottle. Knapweed. Corn-flower. Hurt-sickle. Bachelor's-buttons. Cornfields. A. June—Aug.*

C. Calyx scales egg-shaped, fringe hair-like, upright: ni'gra. lower leaves lyre-shaped, angular; upper ones egg-strap-spear-shaped, and nearly entire.

Var. 1. Flowers without rays.

Fl. dan. 996–*E. bot.* 278–*Walc.*–*Reich. fl.*–*Clus.* ii. 7. 2–*Dod.* 124. 2–*Lob. obs.* 292. 3, *and ic.* i. 541. 1–*Ger. em.* 727. 1–*Park.* 468. 1–*H. ox.* vii. 28. *row* 2. 1–*Pet.* 22. 8–*J. B.* iii. *a.* 27.

Differs from C. *phrygia* in the fringed little scales being egg-shaped, between upright and open, and not bowed back and awl-shaped. Like to C. *Jacea*, but without neutral florets in the circumference. LINN. *Stem* angular, scored, slightly cottony, often tinged with purple. *Branches* alternate, the upper ones rising above the stem, thickest towards the top, with 1 flower. *Leaves* wing-cleft, or toothed, sometimes entire, spear-shaped, sitting, more or less cottony. *Cal. outer scales* spear-shaped, dark purple, almost black, with a long fringe, hairy; the *middle* ones yellow, strap-shaped below, spear-shaped and fringed at the end; the *inner* whitish, smooth, shining, strap-shaped, terminated by a broad, roundish, purple, little-scale, convex without, concave within, ragged, not fringed. *Florets* all alike; *tube* whitish, long; *border* purple, longer than the anthers. *Style* shorter than the anthers, with a downy ring beneath the summit. *Summit* slightly cloven. WOODWARD. Upper leaves either egg or strap-shaped, and sometimes entire.

Black Knap-weed. Knop-weed. Horse-knops. Matfellon. Hard-heads. Hard-irons. Meadows and pastures. P. July, Aug.

Var. 2. Flowers radiated.

This variety is common in Wiltshire, as I learn from Mr. Norris, and Mr. Stackhouse informs me that it is more frequent

* The expressed juice of the petals is a good blue ink: it stains linen of a beautiful blue, but the colour is not permanent in the mode it has hitherto been applied. Mr. Boyle says, the juice of the central florets, with the addition of a very small quantity of alum, makes a lasting transparent blue not inferior to ultramarine. *Gent. Mag.* 1748. Cows, goats, and sheep eat it. Horses and swine refuse it.

in Cornwall, and the west of England, than the sort without rays. It has sometimes been mistaken for the C. Jacea, but in that the scales of the calyx are thin, membranaceous or skinny and ragged at the edges, not with a regular fringe of stiff black bristles as in this.

Outer florets purple, radiating, divided nearly half way down into 4 equal strap-shaped segments, without stamens or pistils. Other radiating florets exactly resembling these, but furnished with stamens and pistils. *Central florets* white; anthers and summits purple. *Stem* fluted, cottony. *Lower leaves* spear-shaped, toothed, somewhat hairy; *upper leaves* strap-shaped, very entire. It may possibly prove a distinct species.

Scabio'sa. C. Calyx scales fringed: leaves wing-cleft; segments spear-shaped.

E. bot. 56–*Matth.* 959–*J. B.* iii. *a.* 32. 2–*Ger.* 588. 2, *and* 583. 5.

Root-leaves winged, on long leaf-stalks, with a winged midrib; wings egg-shaped, toothed, frequently with wing-cleft appendages at the base, the terminating one very large, confluent with the next pair, *stem-leaves* with winged clefts: segments spear-shaped, mostly entire. *Flowers* single, terminating. *Cal.* bellying; scales closely tiled, in several rows, egg-shaped, green, nearly smooth, fringed, tipt and edged with black. *Florets* tubular; *those of the circumference* without stamens or pistils, reddish purple, scored; segments 4, sometimes 5. *Anthers* whitish. *Style*, pale below, purplish upwards, with a downy ring beneath the summit. *Summit* cloven. *Seeds* oval, brown, compressed, shining; viewed with a glass slightly hairy. *Down* yellowish, bristly, as long as the seed. Mr. Woodw. *Stem* nearly cylindrical, scored. *Leaves* roughish, and a little hairy. *Cal.* globular; scales black, green at the base, fringed with light brown hair. *Florets of the centre* marked on the outside with 5 dark purple lines, the tube and distended border filled with a honey-like juice. *Filaments* a little woolly. *Anthers* shining, dark purple. *Summit* cloven. *Fruit-stalks* long, naked. *Blossoms* purple, sometimes white.

Greater Knapweed. Borders of cornfields. P. July.

(2) *Calyx thorny; thorns compound.*

Calci'trapa. C. Calyx sitting, almost doubly thorned: leaves wing-cleft, segments strap-shaped, toothed: stem hairy.

E. bot. 125–*Kniph.* 11–*Ger.* 1003. 1–*Col. phyt.* 21–*Clus.* ii. 7. 3–*Dod.* 733–*Lob. obs.* 482. 2, *and ic.* ii. 11. 2–*Ger. em.* 1160. 1–*J. B.* iii. *a.* 89–*Park.* 988. 1–*Pet.* 21. 11–*Ger.* 1003. 2–*Lonic.* i. 72. 2.

Stem proliferous. *Calyx* thorns white. *Bloss.* purple, not yellow, sometimes white. LINN. *Thorns* yellowish.

Star Thistle. Star Knapweed. Barren meadows and road sides. [Yarmouth Denes, near the sea, with a white blossom, frequent. Mr. WOODWARD. Bethnal Green. Mr. JONES. Sandsend near Whitby, Yorkshire. Mr. ROBSON. Road sides North of Bedford, common. Mr. PITT.] A. July, Aug.

C. Flowers solitary: calyx thorned: branch-leaves decurrent, without thorns, spear-shaped; root-leaves lyre-wing-cleft. solstitia'lis.

E. bot. 243–*Kniph.* 8–*Dod.* 734. 1–*Ger. em.* 1166. 2–*Park.* 989. 4–*Pet.* 21. 12–*Col. ecphr.* 31–*Lob. adv.* 372, *and ic.* ii. 12. 1.

Root fibrous. *Stem* 2 feet high, branched, open. *Root-leaves* lyre-shaped, tapering; lateral segments spear-shaped, toothed, the terminating one winged, triangular, halberd-shaped; *stem* and *branch-leaves* very entire, short, waved, sprinkled with a white cobweb-like wool. *Flowers* terminating, solitary. *Fruit-stalks* very long, leafy. *Cal.* egg-shaped, without any leaf at the base; scales white, those which surround the base longest, only toothed at the base, with hand-shaped, short, and nearly equal thorns; the rest with awl-shaped thorns as long as the calyx, and armed on each side with lesser thorns. *Blossoms* yellow. LINN.

St. Barnaby's Thistle, or *Knapweed.* Cornfields and hedges. Not far from Cirencester, Gloucestershire, and Northfleet, Kent. In a field at Arminghall near Norwich. Mr. CROWE. Linn. Tr. ii. 236. A. July, Aug.

NECESSARIA.

CALEN'DULA. *Recept.* naked: *down* none: *calyx* of many, nearly equal leaves: *seeds* of the centre, mostly membranaceous.

C. Seeds boat-shaped, prickly, turned inwards; the innermost crowded together, the outermost upright, furnished with a tail. arven'sis.

H. ox. vi. 4. 6–*Tabern.* 713–*Ger.* 603–*J. B.* iii. 103.

Nearly allied to the C. officinalis. *Leaves* somewhat toothed, but heart-spear-shaped; not spatula-shaped. LINN. *Leaves,* the upper ones heart-shaped, lower ones strap-egg-shaped, all of

them embracing the stem. *Flowers* yellow, but not near so large, nor of so deep a yellow as the cultivated C. officinalis.*

Marigold. [On Ballast hill, Sunderland, Durham. Mr. Robson. On the shores of the harbour at Falmouth.]

FILA'GO. *Recept.* naked: *down* short, simple, sometimes none: *calyx* tiled: *female florets* partly without petals, within the scales of the calyx.

arven'sis. F. Stem supporting a panicle: flowers conical, lateral. [*See* Gnaphalium arvense.]

germa'nica. F. Panicle forked: flowers roundish, axillary, rough with hair: leaves acute. [*See* Gnaphalium germanicum.]

ga'llica. F. Stem forked, upright: flowers awl-shaped, axillary: leaves thread-shaped. [*See* Gnaphalium gallicum.]

monta'na. F. Stem somewhat forked, upright: flowers conical, terminating and axillary. [*See* Gnaphalium montanum.]

* This is a very common plant in the cornfields and in the vineyards in Portugal, and is used as food for milking cows. The milk yielded by the cows which are fed upon it, is very good. When we consider the constant intercourse kept up between Portugal and Falmouth, it is not improbable that the seeds of the plants I found might have been imported from thence: and in a similar manner have several other exotics probably been introduced, and in time become naturalized; and this conjecture is particularly illustrated by the various other foreign plants now to be found on Ballast hills, near Sunderland, Durham; and in other like situations.

CLASS XX.

CRYPTOGAMIA.

MISCELLA'NEÆ.

EQUISE'TUM. . . . . *Fructifications* forming an egg-oblong, terminating spike.

LYCOPO'DIUM. . . . . *Capsules* axillary, solitary, naked, kidney-shaped, with 1 cell, and elastic valves.

PILULA'RIA. . . . . *Capsules* 4-celled, globular, sitting in the bosom of the leaves at each joint.

ISOE'TES. . . . . Male flowers solitary, within the base of the inner leaves.

Fem. solitary, within the base of the outer leave: *capsules* 2-celled.

FI'LICES.

(1) *Capsules without an elastic ring; in Spikes.*

OPHIOGLOS'SUM. . . *Capsules* united by an inveloping membrane, so as to form a 2-rowed, jointed spike.

OSMUN'DA. . . . . *Capsules* distinct, 2-valved, forming a bunch-like spike.

(2) *Capsules roundish, on pedicles, encompassed by a jointed elastic ring; and opening irregularly into 2 parts.*

ACROS'TICHUM. . . . *Capsules* covering the whole under surface of the leaf.

POLYPO'DIUM. . . . . *Capsules* forming distinct roundish spots on the under surface of the leaf.

ASPLE'NIUM. . . . . *Capsules* forming straight scattered lines on the under surface of the leaf.

BLECH'NUM. . . . . *Capsules* forming lines adjoining and parallel to the ribs of the leaves.

PTE'RIS. . . . . *Capsules* forming a line at the edge of the leaf.

ADIAN'TUM. . . . . *Capsules* forming oval spots under the reflected points of the leaves.

TRICHO'MANES . . . *Capsules* solitary inserted on the very edge of the leaf.

MUS'CI.

SPHAG'NUM. . . . . *Capsules* mouth not fringed, covered with a lid; without a veil.

SPLACH'NUM. . . . . *Capsule* on a large fleshy receptacle: *Veil* very large.

POLY'TRICHUM. . . . *Capsule* on a very small receptacle: *Veil* hairy.

MNI'UM. . . . . *Capsule* with a lid: *Veil* smooth: *Fruit-stalk* not issuing out of a fleshy receptacle.

PHAS'CUM. . . . . *Capsule* with a veil, and the rudiment of a lid which does not fall off.

BRY'UM. . . . . *Capsule* with a lid: *Veil* smooth:* *Fruit-stalk* terminating, issuing out of a fleshy tubercle.

HYP'NUM. . . . . *Caps.* with a lid: *Veil* smooth: *Fruit-stalk* lateral, issuing, from a turbercle surrounded with scales.

* In BRYUM *sessile*, *tectorum*, & *striatum* the veil is hairy.

FONTINA'LIS. . . . . *Capsule* veiled, sitting, enveloped by the scales of the receptacle.

BUXBAU'MIA. . . . . *Capsule* on a fruitstalk, membranaceous on one side.

HEPA'TICÆ.

MARCHAN'TIA. . . . . Male, *Calyx* salver-shaped, with numerous anthers imbedded in its disc.

Fem. *Calyx* target-shaped, flowering underneath: *Capsules* bursting at their tops: *Seeds* attached to elastic fibres. *(E. bot.)*

JUNGERMAN'NIA. . . *Capsules* on fruit-stalks, naked, 4-valved.

TARGIO'NIA. . . . . *Calyx* 2-valved: *Seeds* very numerous, collected into a globe. *(E. bot.)*

ANTHO'CEROS. . . . . *Caps.* awl-shaped, 2-valved: *Seeds* connected with the valves.

BLA'SIA . . . . . *Sheath* cylindrical, protruding globular buds from its bottom.

RIC'CIA. . . . . *Fructifications* granules buried in the leaf. *(Gmelin.)* *Anthers* cylindrical, sitting on the germen: perforated by the style: *Caps.* globular, crowned by the withered anthers: *Seeds* hemispherical, on pedicles. *(E. bot.)*

ALGÆ.

LI'CHEN. . . . . Male, scattered warts.

Fem. smooth saucers or tubercles in which the seeds are imbedded. *(E. bot.)*

TREMEL'LA. . . . . *Seeds* dispersed through a jelly-like substance.

UL'VA. . . . . *Seeds* dispersed through a jelly-like membranaceous substance, (growing in water.)

BYS'SUS. . . . . *Substance,* wool-like fibres.

CONFER'VA. . . . . *Fibres* hair-like, simple or branched, often jointed; (growing in water.)

FU'CUS. . . . . Substance leather-like: *Fruit* globular, capsule-like; or granulations within the substance, with an open pore above them.

FUN'GI.

(1) *Seeds on the under surface.*

MERU'LIUS. . . . . Pileus with Gills underneath, of the same substance with the rest of the plant.

AGA'RICUS. . . . . Pileus with Gills underneath, of a different substance from the rest of the plant.

FISTULI'NA. . . . . Pileus with separate tubes underneath: Seeds in the tubes.

BOLE'TUS. . . . . Pileus with united tubes underneath: Seeds in the tubes.

HYD'NUM. . . . . Pileus with solid cylinders underneath: Seeds on the cylinders.

HELVEL'LA. . . . . Pileus on a stem, smooth underneath: Seeds on the under surface.

AURICULA'RIA. . . . Flat, membranaceous, fixed when young by the whole under surface: Seeds on the upper surface which becomes reversed as it attains maturity.

(2) *Seeds on the upper surface.*

PEZI'ZA. . . . . Cup-shaped or concave: Seeds discharged by jerks from the upper surface only.

NIDULA'RIA. . . . . Leathery; sitting; bell-shaped. Capsules large, flat, fixed to pedicles at the bottom of the bell.

PHAL'LUS. . . . . Stem supporting a cellular head. Seeds in the cells.

(3) *Seeds on every part of the surface.*

CLAVA'RIA. . . . . Oblong, upright, club-shaped. Seeds emitted from every part of its surface.

(4) *Seeds in the substance of the plant.*

TU'BER. . . . . Fleshy, solid, not becoming powdery; not opening at the top.

LYCOPER'DON. . . . Firm, fleshy, becoming powdery and fibrous, within; opening at the top.

RETICULA'RIA . . . . Pulpy, changing to friable; opening indiscriminately. Seeds lodged in interlacing fibres or membranaceous cases.

SPHÆ'RIA. . . . . Fruit spherical, filled with black powder, mostly concealed by an outer coat; opening at the top.

TRI'CHIA. . . . . Capsule globular, egg-shaped or cylindrical, composed of interwoven fibres. Stem fixed to a membranaceous base.

MU'COR. . . . . Stem very slender. Seeds naked or in capsules at the ends of the stem.

MISCELLANEÆ.

EQUISETUM. *Spike* club-shaped, egg-oblong: *fructifications* target-shaped, opening inwards.

sylvat'icum. E. Stem bearing a spike: leaves compound.

Hedw. Theoria. 1–*Fl. dan.* 1182–*Bolt. fil.* 33–*Ger.* 957, *misprinted* 953. 5–*C. B. th.* 245–*Park.* 1201. 5–*Bolt. fil.* 32.

The entire *plant* very much resembling in figure a fir-tree, its leaves being all in whirls. LINN. *Stem* from 7 to 15 inches high, smooth, slightly scored, pale yellowish brown. *Sheaths* of the same colour, but deeper. *Leaves* 8, 10, or 15 in a whirl, bursting out from the upper knot of the stem. *Fructifications* about 15 in a whirl towards the bottom of the spike. *Anthers* fixed to filaments, which, on being breathed upon, coil up, but in a moment becoming dry, they expand again. After several expansions and contractions they detach themselves, still contracting when moistened, gradually bending from a straight line into a circle. If a drop of water be pushed towards them, they contract before it touches them. These contractions are often so sudden as to throw the object out of the field of view.

Wood Horsetail. Moist woods and shady places near rivulets, and in boggy ground. P. April, May.

Var. 2. Leaves pointing all one way. *R. Syn.* 131. 5. This happens when the stem has been trodden down.

Var. 3. Leaves very long and very slender. R. *Syn.* 131. 6.

In shady and moist situations. It is a variety of E. *palustre.* BOLT. Leaves of a pale yellow green colour. *Ibid.*

I believe this change in the habit occasionally takes place in both species, and indeed more or less so in almost every plant in similar situations.

arven'se. E. Fertile stalk leafless: barren stem leafy, lying down: leaves in whirls.

Curt. 285–*Bolt. fil.* 34–*Kniph.* 1–*Dod.* 73. 2–*Lob. ic.* i. 795. 2–*C. B. th.* 247, *the right hand part of the figure*–*Blackw.* 217. 3 *and* 4–*Fuchs.* 322–*J. B.* iii. 730. 1–*Trag.* 692. 2–*Lonic.* i. 176. 2–*Matth.* 1027–*Cam. epit.* 771–*Dod.* 73. 4–*Lob. obs.* 461. 3. *ic.* i. 794. 2–*Ger. em.* 1114. 5–*Park.* 1202. 11–*Fuchs.* 322–*J. B.* iii. 729. 2–*Ger.* 956. 3.

Fertile stems appearing before the other; soon decaying. *Barren stems* continuing a long time. LINN. *Barren stems* rough, slender. *Leaves* 12 to 15 in a whirl, somewhat branched. LEERS. *Stalk* from a hand's breadth to a foot high, cylindrical, smooth, jointed, the upper knots farther distant, the lower approaching nearer to each other; each joint terminating in a sheath. *Sheaths* furrowed, wider than the stalk, many-cleft; *segments* spear-shaped, tapering to a point. *Spike* yellowish white, nearly an inch long, the base encircled with a membranaceous yellowish border. *Fructifications* in whirls, yellowish. POLLICH. *Stem* when fresh roughish, in moist shady situations smooth and somewhat shining. *Sheaths* in such situations scored with green. *Sheaths* with 4 teeth corresponding to the angles of the leaves, of the same colour with the leaves. WOODWARD. *Root* cylindrical, with threads from the joints, stiffish, woolly, dark brown. *Stalk* fleshy, with several cylindrical tubes within, a central one, with 9 others 3 or 4 times smaller, disposed in a circle round it; and another 9 exceedingly minute between them and the central one; yellowish brown, semitransparent, obscurely marked with 9 scores. *Sheaths* somewhat bellying, of a silvery brown, with 9 furrows; segments 9, pointed, somewhat approaching. *Stalks, sheaths* furrowed as the stem, cloven one third of the way down; teeth blackish brown at the ends, with very shallow white membranaceous edges. *Leaves*, the joints of the upper branches frequently 3-square, and the joints terminating in 3 teeth; teeth open. ST. The fertile stems not to be distinguished from those of the *E. sylvaticum* before the leaves appear, but by observing that the sheaths in the *E. sylvaticum* are divided into 12 segments, but in this species only into 3 or 4.

Corn horsetail. Moist cornfields. P. March, April.

E. Stem angular: leaves unbranched. palus'tre.

Bolt. fil. 35; *Barren plant* 16. 37–*Fl. dan.* 1183–*Lob. ic.* i. 795. 1–*Ger. em.* 1114. 4–*Park.* 1200. 3–*Trag.* 694–*Lon.* i. 176. 3–*C. B. th.* 247, *left hand stem*–*Gars.* 258. *B. fructification*–*Hedwig. Th.* 2. 8. 9. 10.

Stem smooth. *Leaves* 6 to 10, furrowed, smooth, with black scales at the base. LEERS. *Root* black. *Stem* with fewer and deeper scores than that of E. *arvense*, some of the lower joints black, sometimes lengthened out for a considerable way beyond the going off of branches; knots blackish from the sheaths of leaves which rise from the joints. *Leaves* shorter and thicker than those of E. *arvense*, with mostly 5 and rarely 4 or 6 angles. *Sheaths* larger and more lax than those of E. *arvense*, teeth very short, tipped with black, which distinguishes it from the E. *arvense*. WOODW. *Barren-leaves* resemble those of E. *arvense*,

but the second leaves in the E. *arvense* are 4-sided, and the sheaths have 4 teeth, whilst in this species they are 5-sided, and the sheaths have 5 teeth. Bolt.

Paddock Pipe in Scotland. *Marsh Horsetail.* Marshy and watery places. P. June, July.

Var. 2. *many-spiked.* Spikes terminating the upper leaves as well as the stem.

Ray 5. 3. *at p.* 160.

This variety generally arises when the primary stem has been bitten off. Bolt.

fluviat'ile. E. Stem scored: leaves generally unbranched.

Bolt. fil. 36. 37–*Fl. dan.* 1184–*Matth.* 1026–*Dod.* 73. 1–*Lob. obs.* 461. 1. *ic.* i. 793–*Ger. em.* 1113. 1–*Park.* 1200. 1–*Ger.* 955. 1–*C. B. th.* 241–*Blackw.* 217. 1 *and* 2–*Cam. epit.* 770. *B. C.*–*Gars.* 258. *A.*

Sheaths cloven into as many pointed teeth as there are leaves. *Leaves* 30 to 40 in a whirl, deeply furrowed, 4-cornered, consisting of frequent longish joints. Hall. Sheaths of the barren stems surrounded at the top with a well defined blackish brown band; *teeth* lighter brown, smaller and narrower than those of the fertile stems. *Leaves* from 3 to 15 inches long, very closely set. This species may be readily known at first sight by its great size, numerous leaves, and whitish stem. Woodward. *Fertile* stems sometimes leafy, so that Haller is mistaken in his assertion that they are leafless.

River Horsetail. Marshy and watery places, sides of rivers, ditches, pools, and lakes. [Not very frequent—cold springs at Barnby near Lowestoft; between Bungay and Halesworth, St. Faiths Newton Bogs near Norwich. Mr. Woodw.]
P. May, June.

limo'sum. E. Stem frequently naked, smooth.

Bolt. fil. 38–*Ray* 5. 2. *at p.* 160–*J. B.* iii. 729. 3.

Closely allied to *E. fluviatile*; sometimes throwing out a few *leaves*. Linn. A variety of E. *palustre*. *Stems* thicker and taller, those of younger flowering plants leafless, furrows much more numerous than those of E. *palustre*; teeth of the sheaths finely pointed, brown. Hall. *n.* 1077. *β.* It differs also as follows: Whole *plant* smoother. *Root* yellowish. *Stem* brown below, scored; not furrowed. *Sheaths* close clasping the stem, the teeth of the lower brown, those of the upper black, and smaller than those of E. *palustre*. *Leaves* either straggling here and there, or in whirls on the middle part of the stem. *Head* dark brown, but not so dark as in E. *palustre*, also larger. For the

above reasons I cannot think it a variety of E. *palustre*. WOODWARD. *Stems* exactly cylindrical, those which bear fructifications after flowering becoming leafy, and sometimes throwing out lateral branches; those which are barren tapering gradually to the end, and mostly continuing bare of leaves. The shoots of next year upwards of an inch long, from the side of the stem at the knots, which throw out fibrous roots. ST.

We are favoured with the following curious description, and the very accurate drawing, engraved on PLATE XXX, p. 621, by JAMES NORRIS, Esq. "In the month of March 1794, being on a boggy spot of ground near Bromham, where a small stream, by a continued action on the loose soil beneath, had formed a deep channel, my attention was soon directed to the roots of an Equisetum, growing abundantly on the brink of both its perpendicular sides; which presented them laid bare to view, and cleansed by the passage of the water. The roots which, as in all the species of this genus are jointed like the stem, were surrounded at their joints by a series of 6, 7, or 8 bulbs, arranged verticillately, sessile, and about the size of a nutmeg, but shaped like a fig, with a prominent umbilicus at the larger end; when young of a tawny brown colour and downy, when old black and smooth: the pulp within white, and similar in consistence to apple or potatoe. In the succeeding month of April, I had the pleasure to observe many of these bodies in a state of vegetation, some still attached to the parent root, others separate. The young plants were then about a finger's length; issuing from the umbilicus at the great end, from whence also radical fibres were protruded downwards; and this accompanied with a proportionable loss of juice in the sustaining bulb. These were very different in strength, size, and appearance, from the recent shoots immediately proceeding out of the parent root. None of the bulbs were found within a foot or more of the horizontal surface of the earth. In the lower figure of the drawing is represented a transverse section of the root, encircled by a whirl of bulbs, which in number generally correspond with the radial partitions of 6, 7, 8, &c. The upper figure exhibits a portion of the root with only two bulbs, to avoid confusion, in a state of vegetation:"—These bulbs differ much in dimensions from the size of peas to $\frac{1}{4}$ of an inch in diameter. If the full grown bulbs be detached and placed in a vessel of water, the process of vegetation may be conveniently attended to; for the young shoots, in a few days, will burst from the umbilical prominence, accompanied by their radical filaments.

Smooth Horsetail. Common in the beds of rivers near the banks: also shallow ponds, and ditches in marshes.

P. May, June.

hyema'le. E. Stem naked, rough, somewhat branched at the base.

Bolt. fil. 39–*Cam. epit.* 770. *A.*–*Ger.* 955. 2–*Ger. em.* 1113. 2–*Park.* 1021. 7. 8, *right hand figure.*

Stem perennial, green, rough like a file. *Sheaths* of the joints pale, black at the base and edges, with imperfect teeth. LINN. *Stems* furrowed with 18 or 20 rough angles, some of the joints 3 inches asunder. *Sheaths* with as many short blunt teeth as the stem has furrows. *Spike* terminating. LIGHTF. Differs from E. *limosum* in being sea-green, in the greater length of its joints, and in its extreme roughness. WOODWARD.

Rough Horsetail. Shavegrass. Pewterwort. Dutch Rushes. Marshy and watery places, but not common. In a moist ditch near Middleton, Warwickshire, and in a rivulet near Broad-stitch Abbey, Wiltsh. Scippon and Craven, Lancashire, and in Rigby Woods. MEER. Gamlingay Bogs, Cambridgeshire. [River side between Mavis Bank and Laswade near Edinburgh; near Norwich. Dr. J. E. SMITH. Armingdale Wood near Norwich. Mr. CROWE. Just below Stone Bier Lin, near Lanerk, Scotland. St. Sexton Wood, Hedenham, near Bungay. Mr. STONE.]

P. July. Aug.*

Var. 2, Stem with a few leaves. HALL.

Trag. 692. 1–*Lon.* 1. 176. 1–*J. B.* iii. 729. 1–*C. B. th.* 248.

Var. 3. With numerous lateral branches. ST.

Matth. 1028–*Dod.* 73. 3–*Lob. obs.* 461. 2. *ic.* i. 794. 1–*C. B.* 250.

When it has been browsed early in the spring, it puts out numerous lateral branches. Mr. GRIFFITH.

LYCOPO'DIUM. *Capsules* axillary, kidney-shaped, 2-valved, elastic; many-seeded.

clava'tum. L. Leaves scattered, terminating in threads: spikes cylindrical, on fruit-stalks, in pairs.

Dicks. h. s.–*E. bot.* 224–*Dill.* 58. 1–*Fl. dan.* 126–*H. ox.* xv. 5. *row* 1. 2–*Gesn.* i. *tabula picta, f.* 2–*Blackw.* 535–*Pluk.* 47. 8–*Trag.* 555–*Lon.* i. 179. 1–*Ger.* 1374. 11–*Matth. a. C. B.*–*Lob. obs.* 645. 1, *ic.* i. 244. 2–*Ger. em.* 1562. 11–*Matth.* 63–*Park.* 1307. 4–*J. B.* iii. 766.

Stem creeping. *Leaves* open. LINN. *Shoots* from one to several feet in length, firmly attached to the earth by woody fibres.

* The turners and cabinet-makers use it to smooth their work. It is wholesome to horses, hurtful to cows, and disagreeable to sheep.

Branches expanding, distant, trailing; the lower ones again subdividing into forks. *Leaves* closely tiled, strap-spear-shaped, pointed, and hooked, with long white hairs at the end. In the summer, from the ends of the branches, the fruit-stalks rise up, almost leafless, jointed, straight, rigid, from 2 to 4 inches high, dividing at the top into 2 (or 3) cylindrical, flowering spikes. *Spikes* closely tiled with scales or husks, egg-spear-shaped, pointed, hairy at the end, ragged at the edges. Each of these scales incloses a kidney-shaped yellow capsule, exploding when ripe a yellow powder, which resembles sulphur, and burns with an explosion. Weis. *Fruit-stalk* generally with 2 equal spikes, frequently with 1, and sometimes with 3, which are unequal. Mr. Gough.

Common Club-moss. Wolf's Claw. Dry places on mountains, heaths, and woods. Hampstead and Hounslow Heaths, near Esher. [Monshold Heath, near Norwich. Mr. Pitchford. Derbyshire, and the north. Mr. Woodward. Cannock Heath, Staffordshire.] P. July, Aug.*

L. Leaves scattered, fringed, spear-shaped: spikes solitary, terminating, leafy. Selaginoi'des.

Dill. 68, *Selaginoides–Fl. dan.* 70–*Scheuch. it.* i. 6. 1, *at p.* 43–*Hall. enum.* 3. 1. *at p.* 109, *and hist.* 46. 1, *at* iii. *p.* 56–*H. ox.* xv. 5. *row* 2. 11, *the lower part of the figure, the upper being L. inundatum, Pluk.* 47. 7.

Capsules, those at the base of the lower leaves when viewed sidewise apparently in threes, but really in fours, one pair above and the other pair below; at length gaping, and disclosing as many large solid *seeds*; *those at the base of the upper leaves* yellower, of a looser texture, entirely simple, round, not containing seeds, but pollen. Linn. Plant from 1 to 3 inches high.

Prickly Club-moss. Mountainous heaths and pastures. In Scotland, the north of England and Wales. [Mountains in Westmoreland. Mr. Woodw. Rocks above Ffynnon frea Lanberris. Mr. Griffith.] P. June—Sept.

L. Leaves scattered, very entire: spikes terminating leafy. inunda'tum.

Dicks. h. s.–E. bot. 239–*Fl. dan.* 336–*Dill.* 61. 7–*Vaill.* 16. 11–*H. ox.* xv. 5. *row* 2. 11, *the middle and upper branches, the rest belonging to L. Selaginoides.*

* In Sweden they form it into mats or basses, which lie at their doors to clean shoes upon. It restores ropy wine in a few days. The seeds flash when thrown into a flame, and it is said are used in the Theatres to imitate lightning. They are with difficulty made wet, and if scattered upon a bason of water you may dip your hand to the bottom of the bason without wetting it.

Stem creeping. *Spikes* solitary, sitting, smooth. LINN. Branched; the length of a finger or more; cylindrical. *Spikes* sitting, upright. *Leaves* awl-shaped, pointed, smooth, on the creeping shoots pointing one way, two lines long, and one broad at the base. POLLICH. *Shoots* creeping, pointing one way, those bearing spikes an inch long, upright, cylindrical. *Leaves* strap-shaped, crowded, without terminating hairs. *Spikes* leafy, not different from the shoots except in being thicker. *Capsules* compressed, roundish, not kidney-shaped. WEBER.

Marsh Club-moss. Moist heaths and turfy bogs. Hounslow Heath, and near Esher. [Near Norwich, Ellingham Fen near Bungay, Suffolk. Mr. WOODW. On Norton Bog, Cannock Wood, Staffordsh. Hon. Mr. BAGOT.] P. June—Sept.

Sela'go. L. Leaves scattered; pointing 8 ways: stem forked; upright: branches all of the same height: flowers scattered.

E. bot. 233–*Dill.* 56. 1–*Fl. dan.* 104–*H. ox.* XV. 5, *row* 2, 9–*Scheuch. it.* i. 6. 2.

Leaves obliquely disposed in 8 rows, which may be best observed by looking at them, holding the ends of the branches perpendicular to the eye. LINN. *Stems* upright, branched, from 3 to 7 inches high, forked; branches again forked, closely covered with leaves. *Leaves* spear-shaped, sharp-pointed, stiff smooth, shining, scolloped or serrated, and cartilaginous at the edge. *Capsules* in the bosom of the upper leaves, kidney-shaped, flatted, yellow, opening like an oyster, and pouring out a pale yellow powder. WEIS. Root dividing into forks like the stem. DILL. This powder, when sown by Mr. Fox, produced young plants; a complete demonstration that it is the seeds, and not as Linnæus thought, the pollen. Linn. Tr. ii. 315. The whole plant very firm and stiff; from 2 to 5 inches high.

Fir-leaved Club-moss. Mountainous heaths, in the clefts of rocks in Yorkshire, Lancashire, Westmoreland, Cumberland, the Highlands and Hebrides. Near the top of Ingleborough, Yorkshire. CURT. *obs.* 132. [Mountains in the north. Mr. WOODWARD. On Dartmoor, Devon. Needwood Forest, Staffordsh.] April—Oct.*

anno'tinum. L. Leaves scattered, pointing 5 ways; somewhat serrated: stem jointed at each year's shoot: spikes terminating, smooth, upright.

Dill. 63. 9–*H. ox.* XV. 5. *row* 1. 3–*Fl. dan.* 127–*Pluk.* 205. 5.

* It purges, vomits, and destroys worms. A decoction of it is a cure for lice in swine and cattle. LINN. Its properties seem to challenge further inquiry.

Branches contracted at the last year's shoots, as in the female of the Polytrichum *commune*. *Leaves* whirled, in fives, expanding, decurrent. LINN. *Root* branched. Trailing stem very long. Upright shoots from 1 to 2½ inches high, generally branched, supporting the spikes of fructification.

Welch Club-moss. On the mountains of Caernarvonshire. Ray Syn. [About 200 yards south west of Llyn y Cwn, Caernarvonshire. Mr. GRIFFITH.] P. June—Sept.

L. Leaves pointing 4 ways; tiled, acute: stems upright; cloven: spikes sitting; cylindrical. alpi'num.

E. bot. 234–*Dill.* 58. 2–*Fl. lapp.* 11. 6–*Fl. dan.* 79–*J. B.* iii. 767. 1.

Stem creeping, from a span to a foot long. *Branches* alternate, at an inch distant from each other, upright, forked, of the length of a little finger. *Little branches* bundled, from 20 to 30 together, exactly four-cornered, the angles blunt. *Leaves* thickish. *Fruit-stalks* terminating a branch here and there, scarcely 2 or 3 lines high, forked, scarcely distinguishable from the branches, covered with smaller leaves, bearing as many spikes. *Spikes* egg-shaped, nearly smooth. LINN. All the branches divided, and frequently subdivided into forks. DILL. Upright shoots 1½ to 3 inches long; thinner than the spikes which they support.

Mountain Club-moss. Mountainous heaths in Yorkshire, Cumberland, and the mountains of Wales, the Highlands and Hebrides. [Near the top of Ingleborough, Yorkshire. CURT. *obs.* 133. Near the Holme, about 5 miles from Burnley, Lancashire. Mr. WOODWARD. On Yew barrow, in Furness Fells, along with L. Selago. Mr. JACKSON.] P. July—Oct.

PILULA'RIA. *Calyx* common woolly, globular, 4-celled; opening in 4 directions: *anthers* many: sitting: *pistils* many: *style* none.

P. globulifera.

E. bot. 521–*Dill.* 79–*Fl. dan.* 223–*Bull.* 375–*Bolt.* 40–*Pet.* 9. 8–*Vaill.* 15. 6–*Pluk.* 48. 1–*H. ox.* xv. 7. 49.

Stem slender, trailing, striking root at the joints, and sending out delicate slender leaves, 2 or 3 inches long, generally 3 from a joint. *Fructifications* globular, like pepper corns, on very short pedicles at the base of the leaves.

Pillwort, Pepper-grass. Pepper-moss. In grounds that have been overflowed, especially in a sandy soil. Near Streatham Wells; Petersfield; and on Hounslow Heath. [Hainford and Stratton heaths, Norfolk. Mr. CROWE. St. Faith's Newton

Bogs. Mr. PITCHFORD. About 2 miles from Mold, on the north side of the Chester road, near Clawdd Offa, or Offa's Dyke, Mr. GRIFFITH. Various bogs in Angus and Perthshires. Mr. BROWN.] P. June—Sept.

ISOE'TES. Male. *Anthers* sitting within the base of a leaf.
Fem. *Capsule* 2-celled, within the base of a leaf.

lacus'tris. I. Leaves awl-shaped, semi-cylindrical, bowed back.

Bolt. 41—*Fl. dan.* 191—*Dill.* 80. 2—*Ray ed.* i. 2, *at p.* 1.

Root fibrous; fibres numerous, simple, slender, striking deep into the mud. *Leaves* growing in thick tufts, 6 or 7 inches long, extremely like young rushes, convex on the back, flat, or slightly convex in front; at the base swelling into a kind of bulb, covered by a thin tender skin, which bursts and discovers it to be filled with numerous minute whitish seeds, which examined in the microscope appear spherical, roughish, somewhat transparent, and having 3 ribs meeting in a centre. Mr. WOODW. *Leaves* so brittle that they break on the least attempt to bend them. The transverse diaphragms very visible. I have often found it in seed. Mr. GRIFFITH.

Quillwort. At the bottom of lakes. [In Ffynnon frech, a small lake near the top of Snowdon. R. *Syn.* Mr. GRIFFITH. Near Llanberris, and Lyn Ogwan; near the top of Snowdon; Loch Tay, and other Higland lakes. Lyn y Cwn near Snowdon. BENNANT. Derwent Water, Cumberland. Mr. WOODWARD. Loch Lomond. Dr. HOPE. Loch of Clunie, Perthsh. abundant. Mr. BROWN. In White Meer, near Ellesmere. Mr. GRIFFITH.] P. May, Sept. [In seed in July. Mr. GRIFFITH.]

Var. 2. HUDS.—*Dill.* 80. 1; *I have often found a plant resembling this, but never could find it in seed.* Mr. GRIFFITH.

Leaves not so stiff, from the base of which rises a stem throwing off shoots at different distances. RICHARDSON in R. *Syn.*

I apprehend that Richardson here has applied the word stem, to the shoot which connects the offspring to the mother plant.

[I have found leaves of it in Llyn Ogwen, but could not procure an entire plant. Mr. GRIFFITH. At the bottom of Derwent Water. Mr. WOODW.]

Var. 3. HUDS. Leaves very brittle, sometimes twice as long as those of var. 1, narrower and more pointed, transparent, with many minute pores. RICHARDSON in R. *Syn.* Grows with variety 1. *ib.* 307.

FI'LICES.

OPHIOGLOS'SUM. *Capsules* numerous, nearly globular, without an elastic ring; united by a membrane into a 2-rowed spike; opening crosswise when ripe: *seeds* numerous, minute.

O. Leaf egg-shaped, veinless, bearing the spike. *E. bot.* vulga'tum.

Dicks. h. s.–E. bot. 108–*Sheldr.* 28–*Fl. dan.* 147–*Fuchs.* 577–*Lonic.* i. 103–*J. B.* iii. 708. 2–*Trag.* 323–*Kniph.* C–*Cam. epit.* 364–*Park.* 506–*Gars.* 425–*Tourn.* 325. 1–*Bolt.* 3–*Blackw.* 416. 1 *and* 2–*H. ox.* xiv. 5, *row* 3. 1–*Barr.* 252. 1–*Matth.* 594–*Ger.* 327–*Dod.* 139. 1–*Lob. obs.* 471. 1; *ic.* i. 808. 2–*Ger. em.* 404. 1–*Fructification, Hedwig. Th.* 4. 20, 21, 22, 23.

Stem solitary. *Leaf* egg-spear-shaped, embracing the fruit-stalk. *Spike* strap-shaped, at first green, when ripe brown. Mr. Woodw. *Leaf* sometimes slightly lobed with small appendages on one or both sides. Bolt.

Common Adders-tongue. Moist cold meadows and pastures. —Meadows and sides of rivulets in the north of Yorkshire. Curt. [Love Lane, near Derby. Mr. Whateley. Near Blymhill, Staffordshire. Mr. Dickenson. Beddington, near Bungay, Suffolk. Mr. Stone. Near Meltingham Castle, Suffolk, frequent. Mr. Woodward. Broadmoor, near Birmingham.] P. May, June.

Var. 2. *many-spiked.* Fruit-stalk divided at the top, each branch supporting a spike; Bolt. and the spike itself sometimes dividing into 2 or 3.

Blackw. 416. 3–*Bolt.* 1. 1–*Lob. ic.* i. 809. 1–*Ger. em.* 404. 2–*H. ox.* xiv. 5, *row* 3. *f.* 2–*H. ox. ib. f.* 3, 4, 5, C–*Cam. epit.* 364–*Park.* 506, *the lesser figures.*

OSMUN'DA. *Spike* branched: *Capsules* distinct, sitting, globular, 2-valved: without an elastic ring; opening either vertically or horizontally.

(1) *Fruit-stalks distinct, rising from the stem at the base of the leaf.*

O. Stalk solitary: bunch lateral: leaf winged, solitary. Luna'ria.

Dicks. h. s.–*Kniph.* 11–*E. bot.* 318–*Blackw.* 420–*Fl. dan.* 18. 1–*Garid.* 78, *at p.* 346–*Col. Phyt.* 18–*Cam. epit.* 643. 1–*Bolt. fil.* 4–*Barr.* 252. 3–*H. ox.* xiv. 5. 1–*Lon.* i. 77. 1–*Matth.* 903–*Ger.* 328. 2–*Matth. a. C. B.* 647. 1–*Clus.* ii. 118. 2–*Dod.* 139. 2–*Lob. obs.* 470. 3; *ic.* 1. 807. 2–*Ger. em.* 405. 2–*Park.* 507–*Fuchs.* 483–*J. B.* iii. 710–*Trag.* 914.

Within the base of the *stem*, early in the spring, may be found a complete rudiment of the next year's plant. Linn. *Wings* of the leaf fleshy, crescent-shaped, semi-circular, and halberd-shaped. It so exactly resembles Ophioglossum *vulgatum* in habit and structure, that they ought by no means to be separated. Mr. Woodw. About 5 inches high. *Leafits* irregularly scolloped. *Spike*, or rather panicle, from 1 to 2 inches long.

Common Moonwort. Mountainous meadows and pastures in Westmoreland; near Settle, Yorkshire; Scadbury Park, Kent; and Chisselhurst Common. Mear Bank, by Sykes Wood, Ingleton, Yorkshire. Curt. North side of Bredon Hill, Worcestershire. Nash. [Near Bury. Mr. Woodw. Stratton Heath, Norfolk. Mr. Crowe. On coalpit banks near Stourbridge. Mr. Waldron Hill.] P. May—July.*

Var. 2–Linn. Leaves and stalks several. Cam.

Cam. epit. 644–*Matth. a. C. B.* 647. 2.

Found in England. Cam. *ib.*
Leaves in pairs, doubly winged, wings cut. *Wild. n.* 875.

Var. 3. Leaves cloven into segments.

Breyn. cent. 93–*H. ox.* xiv. 5. *row* 2. 3–*Fl. dan.* 18. 3.

Osmunda Lunaria β Huds. Bolt. p. 5.
Westmoreland, and the northern counties. *R. Syn.*

(2) *The leaf itself bearing the fructifications.*

rega'lis. O. Leaf doubly winged: bunches terminating, more than doubly compound.

Kniph. 2–*E. bot.* 209–*Pluk.* 181. 4–*Trag.* 543–*Blackw.* 324–*Tourn.* 324–*Fl. dan.* 217–*Bolt.* 5–*J. B.* iii. 736–*Dod.*

* Obs. *Osmunda Struthiopteris*, *Spicant*, and I believe *crispa*, do not belong to this genus; but *virginica*, *regalis*, and *cinnamomea* correspond in structure with *O. Lunaria*. These latter, with the genus *Ophioglossum*, and perhaps *Onoclea*, which I have never seen in fructification, form a natural family of the tribe of Ferns, distinguishable by the want of the annular elastic ring, which is common to *Osmunda Struthiopteris*, and *Spicant*, and to all the *Ferns properly so called*, and which unites them and the genera *Acrostichum*, *Polypodium*, *Hemionitis*, *Asplenium*, *Blechnum*, *Lonchitis*, *Pteris*, *Adiantum*, and *Trichomanes*, into another distinct natural assemblage. St.

463–*Lob. obs.* 474. 1, *and* 2; *ic.* i. 813–*Ger. em.* 1131–*Park.* 1038–*Ger.* 971–*H. ox.* xiv. 4. *row* 3. 1–*Gars.* 273–*R. Syn. ed.* i. 1. 2. *at p.* 1.

Capsules opening vertically. Mr. Stackhouse. From 2 to 4 feet high, of a pleasant transparent green. *Leaves* doubly winged. *Leafits* strap-spear-shaped, blunt, finely but indistinctly serrated, the lower and younger ones often lobed at the base. The upper wings change into clusters of capsules, and lose all appearance of foliage. *Fruct.* when ripe, red brown.

Osmund Royal. Flowering Fern. Royal Moonwort. Watery places and boggy marshes. [About Cosgarne and Marazion in the mouths of old mines. Mr. Watt. Bogs near Yarmouth. M. Woodw. St. Faith's, Newton Bogs, near Norwich. Mr. Crowe. Chartley Moss, Staffordsh. Hon. Mr. Bagott. Moist hedges, New Forest, Hants. This plant, though before not to be found for many miles around Birmingham, lately appeared on a butt on Mosely Common, artificially made with mud from a deep pit, in which the seeds had probably lain for a great length of time. It continued to flourish so long as the butt was permitted to remain, but has probably now again disappeared. By such accidental circumstances may many apparent errors in the loci natales of plants often be accounted for.] July, Aug.*

(3) *Leaves, some bearing fructifications.*

O. Leaves spear-shaped, wing-cleft; very entire, parallel, running into each other. *See* Blechnum Spicant. — Spi'canthus.

O. Leaves more than doubly compound; leafits alternate, roundish, cut. *See* Pteris crispa. — cris'pa.

ACROS'TICHUM. *Capsules* entirely covering the under surface of the leaf.

(1) *Leaf simply divided.*

A. Leaves naked, strap-shaped, jagged. — septentriona'le.

Fl. dan. 60–*Lob. adv.* 17. 2. *ic.* i. 47. 1–*Ger. em.* 1561. 8–*Bolt. fil.* 8–*Trag.* 537–*Lon.* i. 224. 5–*Ger.* 343. 4–*Park.* 1045. 8–*J. B.* iii. 755. 2.

* Impressions of the leaves are frequent in the nodules of iron stone found in Coalbrook Dale iron works. It is the only species of an indigenous vegetable which I have ever seen in a fossil state. But it is a native of Virginia also. Sr. All the other impressions of Filices, which I have seen on iron-stone, seem to be those of American plants. The root boiled in water is very slimy, and is used in the North of Europe to stiffen linen instead of starch.

Fructifications, whilst immature, in short indistinct lines or dots. It is therefore, whilst young, an ASPLENIUM. BOLT. p. 7. and 12. From 2 to 5 inches high. *Leaves* mostly in pairs; strap-spear-shaped, on long leaf-stalks rising from the root.

Clefts of rocks and old walls. Tops of mountains in Wales, on Ingleborough, Yorkshire, and above Ambleside, Westmoreland. [Rocks on the south side of Blackford Hill, plentiful. Mr. BROWN. Rocks in Edinburgh Park. Dr. HOPE.] P.

(2) *Leaves wing-cleft.*

ilven'se. A. Wings opposite, united, and very entire at the base; blunt, hairy underneath. *See* POLYPODIUM ilvense.

PTE'RIS. *Capsules* disposed in a line under the reflected edge of the leaf.

cris'pa. P. Leaves more than doubly compound: leafits alternate, roundish, cut.

Bolt. 7–Fl. dan. 496–*H. ox.* xiv. 4. 4, *and* 27–*Pluk.* 3. 2, *and* 3–*J. B.* iii. 743–*H. ox.* xiv. 5. 25.

Leaf-stalks waved, green. *Fructifications* in lines along the under margin of the leafits, which is rolled back upon them, as in *Pteris aquilina*; after the discharge of the seeds increasing in breadth so as to cover the whole disk, except the mid-rib. BOLT. *Leaf-stalks* from 2 to 7 inches long. *Leaf* from $1\frac{1}{2}$ to 3 inches long. *Leafits* of the barren leaves wedge-shaped and snipt at the edge; those of the fertile leaves much narrower, strap or strap-spear-shaped, and entire. *Capsules* surrounded with an elastic ring; but Osmunda and Ophioglossum have no such ring.

Stone Fern. Crisped Fern. Parsley Fern. Stone Brakes. [Rocks, heaths, old walls in the northern counties, common. Woodw.—In Rutland. Mr. JACKSON.—Shap, very common, also Penterfell, near Kendal. Mr. GOUGH.—Cader Idris. Fructifications ripe in September. Mr. GRIFFITH.]

Var. 2. Leaves curled.

Mr. Jackson has observed 2 varieties with curled leaves, the one curled like Parsley, the other like the flowering part of Osmunda regalis.

aquili'na. P. Leaves more than doubly compound: leafits winged: wings spear-shaped; the lowermost wing-cleft; the upper ones smaller.

Ger. 969. 2–*Bull.* 207–*Bolt.* 10–*Pluk.* 182. 1–*Blackw.* 325–*Fuchs.* 596, *misprinted* 569–*Dod.* 462. 2–*Trag.* 542–*Matth.* 1291–*Gars.* 272–*Lob. obs.* 473. 2. *ic.* i. 812. 2–

Ger. em. 1128. 2–*Park.* 1037, *misprinted* 1039–*H. ox.* xiv. 4. 3–*Cam. epit.* 992.

The *Root* cut obliquely presents a kind of representation of the Imperial Eagle. Linn. Where Linnæus has named it the P. aquilina or eagle brakes.

Female Fern. Common Brakes. Heath and woods. P. Aug.*

BLECH'NUM. *Capsules* forming 2 parallel lines near the rib of the leaf.

B. Barren leaves wing-cleft: fruitful leaves winged, narrower; segments very entire. Spi'cant.

Hedw. Theor. 5, *the fertile and barren leaf, with the parts of fruct. dissect. and magnified–Curt.* 127–*Fl. dan.* 98–*Trag.* 550–*Lon.* i. 225. 1–*Clus.* ii. 213. 1–*Dod.* 469. 1–*Lob. obs.* 475. 2; *ic.* i. 815. 2–*Ger. em.* 1140. 2–*Park.* 1042. 2–*H. ox.* xiv. 2. 23–*Ger.* 978. 2–*Bolt.* 6–*J. B.* iii. 745. 2–*Cam. epit.* 665–*Gis.* 49.

Flowering-leaves much narrower than the barren ones. Linn. *Fructifications* covered at first with a thin membrane. *Capsule* of 1 cell and 2 valves, connected by an annular elastic cord, containing many minute seeds. Hedwig. *Barren Leaves*, segments widest at the base, strap-spear-shaped, the lateral ribs forked, sometimes, though rarely terminating in minute scollops. *Fertile* leaves, segments not half so broad, separate, though the confluence may almost always be traced, and towards the end of the leaf gives a waved appearance to the mid-rib. Woodward. *Fertile* leaves 12 to 18 inches high, and near 2 inches broad, the lower part naked or with short imperfect leafits. *Barren* leaves from the same root, but only about half as tall, clothed with leafits nearly to the bottom.

Rough Spleenwort. Osmunda Spicant. Linn. *Acrostichum Spicant.* Bot. Arr. ed. ii. It is now introduced as a Blechnum in compliance with the opinion of Dr Smith and Mr. Robson, though from the narrowness of the leafits it is not easy to determine whether the rows of capsules may more properly be considered as contiguous and parallel to the mid-rib, which is the character of that genus, or is disposed along the edge of the leaf

* A tolerably pure alkaly is obtained from the ashes. The common people in many parts of England mix the ashes with water, and form them into balls: these balls are afterwards made hot in the fire, and then used to make lye for scouring linen.—It makes a very durable thatch; and is an excellent litter for horses and cows. Where coal is scarce, they use it to heat ovens and to burn limestone; for it affords a very violent heat. In the more inhospitable climates, bread is made of the roots. The Fern Moth feeds upon it.

which would refer it to the Pteris. It appears, however, from Hedwig's microscopical dissections, that the *anthers* are found upon the mid-rib, and that circumstance is I think sufficient to determine that the rows of capsules more properly belong to that than to the edge of the leaf, notwithstanding Hedwig himself has determined it to belong to the genus Acrostichum. See Pl. XIII. fig. 9, 10, 11.

Groves and moist heaths. [St. Faith's Newton woods, near Norwich. Common in Herts, and frequent in the North. Mr. Woodward.—At Hainsford, Norfolk. Mr. Crowe. In lanes about Aston Park near Birmingham.] P. July—Sept.

ASPLE'NIUM. *Capsules* disposed in straight and nearly parallel lines on the under surface of the leaf.

(1) *Leaf simple.*

scolopen'-drium. A. Leaves heart-tongue-shaped; very entire: stalks hairy.

Curt.-Tourn. 319–*Blackw.* 138–*Bull.* 167–*Bolt.* 11–*Gars.* 346–*Trag.* 549–*Fuchs.* 294–*J. B.* iii. 756–*Clus.* ii. 213. 2–*Dod.* 467. 1–*Cam. epit.* 579–*Walc.*–*Lob. obs.* 468. 3–*Ger. em.* 1138. 1–*Park.* 1046. 1. *f.* 2–*H. ox.* xiv. 1. 1–*Lon.* i. 224. 3–*Matth.* 831.

Leaf-stalks rising from the root, about 2 inches long. *Leaf* strap-shaped but rounded and hollowed at the base, from 8 to 12 inches long, or more; $1\frac{1}{2}$ to $2\frac{1}{2}$ inches broad, the shortest leaves the broadest. *Fructifications* in lines, slanting upwards from the mid-rib, but not in contact with it.

Spleen-wort or *Harts-tongue.* Moist shady rocks, mouths of wells, old walls, and in the fissures of rocks. On the tops of most of the high mountains in Yorkshire. Curt. P. Aug. Sept.

Var. 2. Leaves curled and jagged at the edge.

J. B. iii. 757. 3.

[Near a petrifying spring, by the side of a rivulet at the bottom of Garn Dingle, 3 miles from Denbigh. Mr. Griffith.]

Var. 3. Leaves with many clefts at the end.

Clus. ii. 213. 3–*Dod.* 467. 2–*Lob. obs.* 469. 1; *ic.* ii. 805. 2–*Ger. em.* 1138. 2–*Park.* 1047. 1–*J. B.* iii. 757. 2–*H. ox.* xiv. 1. *row* 1. 2–*Ger.* 967. 2.

Phyllitis multifida. R. Syn. 117. In a lane near Swaneling, not many miles from Southampton. *Ger. em.* [Near Bromham, growing in the mouth of a well very much shaded. Mr. Norris.]

Var. 4. Leaves with clefts at the edges.

Tourn. 451.

Phyllitis polyschides, &c. R. Syn. 117. In woods. BOBART in R. Syn. 117.

Var. 5. Stalk branched, with 3 or more leaves.

H. ox. xiv. 8.

Mr. Gough sent me a specimen of this variety in which the stalk divides into 5 branches, but it is entire at the base for about $2\frac{1}{2}$ inches, and furnished with its usual leafy border.

This was gathered on Warton Cragg, near Lancaster.

All the above varieties are much smaller than the plant in its more common state.

Var. 6. Leaves much plaited and crenated at each edge, spear-shaped, (sometimes heart-tongue-shaped,) nearly as large as the common variety.

Found in woods at Stoutshill, Gloucestersh. by the Rev. Mr. BAKER.

(2) *Leaf wing-cleft.*

A. Leaves wing-cleft; lobes alternate, confluent, blunt. Ce'terach.

Bull. 333–*Walc.*–*Gars.* 212–*Barr.* 1051, 1052, 1043. 1044–*Tourn.* 318–*Tragg.* 551–*Dod.* 468–*Lob. obs.* 470. 1; *ic.* i. 807. 1–*Ger. em.* 1140. 1–*Park.* 1046. *f.* 1–*Ger.* 978. 1–*Matth. a. C. B.* 646. 1–*H. ox.* xiv. 2. *row* 3. *f.* 4–*Blackw.* 216–*J. B.* iii. 749–*Bolt.* 12–*Matth.* 899–*Cam. epit.* 640.

Leaves so covered underneath with scales as to conceal the fructifications. LINN. *Leaves* many from a root, 3 to 6 inches long, the hollows between the lobes of the same size and shape as the lobes, edges somewhat bent back when the fructifications ripen. Mr. WOODW. Segments of the leaves very entire, semi-oval, green above, thickly covered with brown scales underneath. Mr. GOUGH.

Common Spleenwort. Old walls and clefts of moist rocks. About Bristol plentifully. [At Bury, at Asheridge, Hertfordshire. Northern counties frequent. Mr. WOODWARD. Heydon, Norfolk. Mr. BRYANT. On old walls cemented with mortar mixed with clay; and in a similar soil in limestone fissures on the highest part of Kendal Fell. Mr. GOUGH.] P. May—Oct.

(3) *Leaves winged.*

A. Leafits nearly circular, scolloped. Tricho'manes

Dicks. h. s.–*E. bot.* 576–*Woodw.* 204–*Kniph.* 6–*Walc.*–*Bolt.* 13, *and* 2. 2–*Bull.* 185–*Tourn.* 315. A. D. E.–*Fl. dan.* 119–*Blackw.* 370–*Gars.* 128. B.–*Trag.* 530. 1–*Lon.*

i. 212. 1–*Cam. epit.* 925–*Park.* 1051–*Matth.* 1202–*Dod.* 471. 1–*Lob. obs.* 471. 2; *ic.* i. 809. 2–*Ger. em.* 1046–*H. ox.* xiv. 3. *rosv* 1. 10–*Fuchs.* 796–*Ger.* 985–*Hedwig, Th.* 7. 37, *a leafit magnified.*

Plant from 3 to 7 inches high, consisting of a leaf, several of which rise singly from a black fibrous root; from $\frac{1}{4}$ to $\frac{3}{4}$ of an inch broad. *Leafits* either circular or oblong; sometimes rather cut into lobes; capsules when ripe covering the whole under surface.

Spleenwort. Miltwaste. Common Maidenhair. Old walls, rocks, and shady stony places. P. May—Oct.

alternifo'lium A. Leafits wedge-shaped, alternate, cut towards the end.

Jacq. misc. 5. 2–*Breyn. cent.* 97.

From 3 to 5 inches high. First found in Britain by Mr. Dickson, on rocks in the South of Scotland. Linn. Tr. ii. p. 290. P.

vir'ide. A. Leaves spear-shaped: leafits circular, but with 3 or 4 angles.

Dicks. h. s.–Bolt. 14.

Leaf-stalk of a pale green, sometimes brownish towards the root, and in some specimens brown and glossy as in A. *Trichomanes.* *Wings* rhomboidal, fixed to the leaf-stalk by one of the corners, the upper and lower sides of the base very entire, the other two scolloped. Bolt. *Wings* more lopped at the base than in A. *Trichomanes.* *Leaf-stalk* green, which seems to be the only certain character by which it is distinguishable from *A. Trichomanes.* Mr. Wood. In the A. *Trichomanes* the wings or leafits are less regular in their edges, and less distinctly scolloped; but in the A. *viride* the inner and under edges are always entire, the upper and outer ones always scolloped. The general shape of the leaf in both species is the same, and rather strap than spear-shaped.

A. *Trichomanes* γ Linn. *Green-ribbed Spleenwort.* Moist rocks on mountains. [On an old wall at Black Bank near Leeds. Mr. Wood. On Ingleborough. Bolt. near the summit, and in Borrowdale. Mr. Woodw. Crib y Ddeseil d Clogwyn du yr Arddu. Mr. Griffith. Frequent in the Highlands of Scotland. Mr. Brown.] P. June—Sept.

Var. 2. Wings lobed and cut.

H. ox. xiv. 13. 3–*Pluk.* 73. 6–*Tourn.* 315. C. F.–*Ger.* 975. Scotland. Bobart *in H. ox.*—Jersey. Pluk.

Var. 3. Leaf branched. Bolt.

Bolt. 2. 3–*H. ox.* xiv. 3. 11–*Ger.* 985. 2–*J. B.* iii. 755. 1.

A. Trichomanes ramosum. Linn.—*A. Trichomanes* β (Huds.) On all the high rocks of Caernarvonshire. On a stone wall in a garden at Maidstone, Kent, and on limestone rocks Craven, Yorkshire. On the rocks below Ogden Kirk on the opposite side of the Clough. Bolt.

A. Leafits egg-shaped: serrated; the upper edges expanded at the base, the lower hollowed out. mari'num.

E. bot. 392–*Pet. gaz.* 91. 1–*Bolt.* 15–*H. ox.* xiv. 3. 25–*Pluk.* 253. 5–*Walc.*–*Lob. obs.* 474. 3, *ic.* i. 814–*Ger. em.* 1143. 4–*Park.* 1045. 7.

Stalks reddish brown. *Leafits* in some specimens spear-shaped, acutely scolloped, the scollops equal in number to the lines of fructification, lobed at the base on the upper side. Mr. Woodw. Plant 5 inches high. *Stalk* crooked at the base.

On rocks generally on the sea shore, about Prestholm island, near Beaumaris, at Llandwyn in Anglesea, about the Castle of Hastings, Sussex, and in Devonshire, Cornwall, and Cumberland. In a stone quarry close to the road from Warrington to Winwick, Lancashire. Bolt. [On the coast of Angus between Montrose and Arbroath. Mr. Brown.] P. June—Sept.

Var. 2. Leafits deeply cut. Bolt.

Sibbald Scot. ill. t. 3. *f.* 1. 2–*Bolt.* 2. 4.

Plants corresponding to Sibbald's figures we found in the Coves at Weems in Scotland. Lightf. *Adiantum trapeziforme.* Huds.

(4) *Leaves doubly compound: divisions alternate.*

A. Leafits wedge-shaped, finely scolloped. ru'ta mura'ria.

Kniph. 6–*E. bot.* 150–*Sheldr.* 68–*Bull.* 195–*Walc.*–*Cam. epit.* 785–*Fl. dan.* 190–*Tourn.* 317. 1–*Bolt.* 16–*Blackw.* 219–*Gars.* 128. *a*–*Fuchs.* 730–*J. B.* iii. 753–*Lon.* i. 221. 1, *and* 2–*Trag.* 530. 2–*Dod.* 470–*Lob. obs.* 472. 1; *ic.* i. 811. 1–*Ger. em.* 1144. 3–*Park.* 1050. 4–*H. ox.* xiv. 5. 22–*Ger.* 983–*Matth.* 1041.

Stem bare for near half its length. *Fructifications* in 2 or 3 rows, on each side the rib of the leaf. Bolt. The foliage at first sight has something of a Trefoil appearance. Dr. Smith very properly observes, that the Ferns can only be determined in their early state before the bursting of the membrane which covers the capsules, for in an advanced state the back of the leaf is covered with a confused mass of capsules, with hardly a vestige of their former disposition. He thinks this species may be best distinguished by the membrane always bursting towards an ad-

joining vein or nerve, never towards the edge of the leaf, unless when a vein is found on that side. See E. bot. p. 150.

White Maidenhair. Wall Rue. Tentwort. Old walls and moist crevices of rocks. [Southwold Church, Suffolk, Long Stratton Church, Norfolk. Mr. STONE, Mr. WOODWARD. Walls at Shirehampton, near Bristol; and at Bewdley.] P. June—Oct.

Adian'tum ni'grum. A. Leaves almost triply winged: wings alternate: leafits spear-shaped, cut-serrated.

Kniph. 7–Fl. dan. 250–*Gars.* 126–*Blackw.* 220–*Bolt.* 17. 1, *and* 3–*Dod.* 466–*Ger. em.* 1137–*Ger.* 975. 1–*H. ox.* xiv. 4. 16–*Lob. ic.* i. 810. 2–*Park.* 1049. 2.

Seeds saffron-coloured. LINN. *Lobes*, the extreme serratures so acute as almost to appear fringed. Mr. WOODW. *Stalks* black or deep red brown; glossy. *Fructifications* 3 to 7 on each segment.

Black Maidenhair. Oak Fern. Shady places and old walls. [Pendennis Castle.] P. April—Oct.

Var. 2. *Wings* long, divided into very fine and longish segments. SHERRARD in *R. Syn. Pluk.* 282. 3. *Wings* with hair-like segments. PLUK. *Fructifications* none discovered. Possibly a variety of A. *Adiantum nigrum*, owing to a very shady situation, but if a variety it is a very extraordinary and beautiful one. DILL.

Filix non ramosa, &c. Pluk. alm. p. 150. par. the last but one, as corrected according to mant. p. 78. par. 4. Mountains of Mourn in the county of Down, Ireland. *R. Syn.*

lanceola'tum. A. Leaves doubly winged, spear-shaped: wings alternate: leafits inversely egg-shaped, sharply cut and scolloped. HUDS.

E. bot, 240–*Bolt.* 17. 2, *(but less sharply cut than in the preceding figure.)*

Stalk black below, green upwards. *Leaf* bright green. *Caps.* in an advanced state, forming roundish, as well as oblong patches. E. bot.

Spear-shaped Spleenwort. On old walls and rocks about St. Ives and other places in Cornwall. HUDS. On a wall in the village of Wharf, Yorkshire. BOLT. On the great rock at Tunbridge Wells. Mr. FORSTER. P. May—Sept.

POLYPO'DIUM. *Capsules* disposed in distinct circular dots on the under surface of the leaf.

OBS. The investigation of the species of this extensive genus has always been attended with difficulties and uncertainties;

partly owing to the prevalence of a general resemblance in habit, partly to the different appearances observable in them at different ages, and partly to deficiencies in the specific characters. Nor have authors always been scrupulously accurate in the application of the terms used in describing the leaves.

The plants should not be gathered for examination until of sufficient age to attain a full state of fructification. The terms employed in the subdivisions of the species, and in characterizing the individuals, should be precisely understood. The attention should be more particularly directed to the lower parts of the leaves, wings, &c. for there it is that the characters are most constant, and most observable, the extreme parts generally running together so as to baffle every attempt at description.

The following tabular view of the different British species is offered as a means of facilitating their investigation; the student, therefore, is advised first to compare the plant in question with these characters, and then to look forward for the characters and descriptions given more at large.

(1) *Leaves wing-cleft.*

P. *vulga're.* Lobes oblong, somewhat serrated, blunt.

(2) *Leaves winged.*

P. *Lonchi'tis.* Wings crescent-shaped; finely and sharply serrated: stems with chaff-like scales.

P. *Ilven'se.* Wings opposite, triangular, blunt, hairy underneath, very entire at the base.

P. *arvo'nicum.* Wings spear-shaped, wing-cleft, hairy underneath: stems hairy.

P. *Phegop'teris.* Wings strap-spear-shaped, wing-cleft, united at the base; hairy underneath.

P. *Oreop'teris.* Wings strap-spear-shaped, wing-cleft: lobes bluntish: clusters of capsules at the edges.

(3) *Leaves winged; wings deeply wing-cleft.*

P. *F. mas.* Wings strap-spear-shaped; lobes blunt, finely serrated: stem chaffy.

P. *Thelyp'teris.* Wings spear-shaped, acute; lobes very entire.

P. *denta'tum.* Wings egg-spear-shaped, opposite; lobes egg-shaped, blunt, sparingly cut at the sides, finely toothed at the end.

P. *fonta'num.* Wings egg-spear-shaped, alternate; lobes deeply scolloped.

(4) *Leaves doubly winged.*

P. *aculea'tum.* Primary wings crescent-shaped: acute: leafits serrated with prickles: stem chaffy.

P. *spinulo'sum.* Primary wings spear-shaped: leafits strap-egg-shaped, wing-cleft, and serrated with fine prickles.

P. *fœ'mina.* Primary wings strap-spear-shaped: leafits slender, acute, wing-cleft, or serrated: stems smooth upwards.

P. *crista'tum.* The lowermost secondary wings much longer than those nearest opposed to them.

P. *fra'gile.* Primary wings spear-shaped; leafits wedge, egg, or strap-shaped: segments bluntly or sharply lobed; stem very slender.

P. *tri'fidum.* Primary wings spear-shaped, blunt, leafits of the lower wings mostly 3-cleft: stem bordered.

P. *rhæ'ticum.* Primary wings spear-shaped; leafits egg-spear-shaped, sharply serrated; lower pairs unequal.

(5) *Leaf triply winged.*

P. *Dryop'teris.* Leaves 3 on a stem; doubly winged.

(1) *Leaves wing-cleft; lobes united at the base.*

vulga're. P. Lobes oblong, somewhat serrated, blunt: root scaly.

Ludw. 18–*Curt.*–*Fl. dan.* 1060–*Kniph.* 6–*Bolt.* 18–*Bull.* 191–*Blackw.* 215–*Tourn.* 316–*Walc.*–*Woodv.* 271–*Gars.* 466–*Fuchs.* 588–*Trag.* 540–*Dod.* 464. 2–*Ger. em.* 1132. 2–*Tourn.* 316–*Ger.* 972–*Matth.* 1293–*Dod.* 464. 1–*Lob. obs.* 475. 1. *ic.* i. 814. 2–*Ger. em.* 1132. 1–*Park.* 1039. 1–*H. ox.* xiv. 2. *row* 1. 1–*Ger.* 974. 1–*Cam. epit.* 993–*Lon.* i. 224. 1.

Lobes slightly serrated at the edge. *Fructifications* yellowish brown, in rows, parallel to the rib of the lobes.

Common Polypody. On old walls, shady places, and at the roots of trees, very common. P. June—Oct.*

Var. 2. Lobes doubly serrated.

Barr. 38.

Walls of Windsor Castle. *R. Syn.* [Worcestershire. Sr.]

Var. 3. Lobes sometimes cloven at the end, sometimes enlarged by an appendage growing out of one side.

Bolt. 2. 5. *b. a portion of a leaf.*

In a wood near Bingley, Yorkshire. Mr. Alexander. Braid hill, near Edinburgh. Mr. Brown.

Var. 4. *Cambricum.* Lobes wing-cleft.

H. ox. xiv. 2. 8–*Pluk.* 30. 1–*Bolt.* 2. 5. *(a) a portion of the leaf.*

In this state it never produces fructifications. The same is observable of the waved variety of *Asplenium Scolopendrium.* Lightf.

On a rock in a wood near Dennys Powys Castle, not far from Cardiff, Glamorganshire. *R. Syn.* [Near Kidderminster.] P. June—Oct.

Var. 5. *acutum.* Lobes very long, distantly serrated; tapering to an acute point.

Specimen sent by J. W. Griffith, Esq. [On rocks in North Wales. Crevices of rocks on the South side of the King's Park, Edinburgh. Mr. Brown.]

(2) *Leaves winged.*

P. Wings crescent-shaped, the convex side downwards; Lonchi'tis. fringe-serrated: stems with chaff-like scales.

E. bot. 797–*Fl. dan.* 497–*Tourn.* 314–*Bolt.* 19–*Matth.* 922–*Ger.* 979–*Ger. em.* 1140. 3–*Pluk.* 89. 6–*H. ox.* xiv. 2. *row* 3. 1–*Cam. epit.* 664–*Park.* 1042. 1–*J. B.* iii. 744–*Lon.* ii. 34. 1.

Leaves in circles round the crown of the root, which is rough with the remains of decayed stalks, keeled, from the wings being bent upwards on each side the leaf-stalks. *Leafits* so closely placed as to be tiled, the lower edge covering the upper edge of the next beneath, serratures frequently but irregularly terminating in short spine-like teeth, furrowed underneath with veins, the margin of the upper half of the base of each leafit parallel to the general stalk. *Stalk* furrowed above. *Fructifications* in

* The root is sweetish: by long boiling it becomes bitter. When fresh it is a gentle purgative. An infusion of 6 drams of it in half a pint of boiling water may be taken at twice.

dots, disposed in two parallel lines on each leafit. Mr. Woodward. Plant from 4 to 14 inches long, and from 1 to 2 inches broad; generally curved. *Leafits*, the larger serratures ending in semi-transparent thorns.

Royal Polypody. Great Spleenwort. Spleenwort Polypody. Clefts of rocks. On the highest mountains of Caernarvonshire; on Glydar near Llanberris. [On all the mountains of Breadalbane and Glen lochai, sometimes 2 feet high or more, but quite distinct from the Polyp. *aculeatum*. Mr. Brown.]

P. May—Sept.

Ilven'se. P. Leafits opposite, united, blunt; hairy underneath; very entire at the base.

Dicks. h. s.–Bolt. 42–*H. ox.* xiv. 3. 23–*Pluk.* 179. 4.

Scarcely more than a finger's length. *Stem* greenish, not blackish purple. Linn. *Leafits* 6 or 7 on each side the stem; the lower ones opposite, the upper alternate; thick and opaque; generally cloven into 5 or 7 segments, rounded at the ends.

Acrostichum ilvense. Linn. *Acr. alpinum.* Bolt. Ben Lawers. Mr. Dickson. Near the top of Clogwyn y Garnedd.

P. July—Sept.

arvo'nicum. P. Leafits spear-shaped, wing-cleft; hairy underneath: stem hairy.

Pluk. 89. 5–*Fl. dan.* 391. *(Mr. Bolton believes his tab.* 9. *to be the same plant.)*

From 3 to 5 inches high. *Leafits* 7 to 15 pairs, cloven on each side into 5 or 6 segments; spear-shaped, hairy underneath. Bolt. It is a very rare plant, even on Snowdon. Mr. Llwyd, in Ray Syn. p. 119. On a moist black rock almost at the top of Clogwyn y Garnedd, facing the North-west, directly above the lowet lake. Dr. Richardson, *ib.*

Acrost. ilvense. Huds. and Bolt. P. July—Sept.

This seems sufficiently distinct from the P. *ilvense* found on the Scottish Alps by Mr. Dickson. Mr. Griffith thinks that Bolt. t. 9. is only a very small and stiff plant of Polyp. fragile gathered in a high and exposed situation; and that it is not the plant found by Mr. Lloyd in Ray's *Syn.*

Phego'pteris. P. Lowermost leafits bent back, each pair united at the base by a 4-cornered little appendage.

Bolt. 20*–*H. ox.* xiv. 4. 17, *f.* 3, *the quadrangular appendage not expressed.*

* The lowermost pair of leafits touch the pair above, and their bending back to back not expressed. Mr. Woodward.

Leafits spear-shaped, wing-cleft. LINN. *Plant* sometimes 10, and *stalk* 12 inches high. *Leafits*, the lowermost pair not confluent as all the rest, and placed $1\frac{1}{2}$ inch from the pair above it; in a vigorous plant bent almost back to back, in consequence of which, when dried and gummed on paper, they form an acute angle with the stalk, and might lead those who had not seen the plant growing, to suppose they grew in the same plane with the rest. *Lobes* semi-elliptical. WOODWARD. Whole *plant* hairy.

Wood Polypody. Clefts of rocks in moist and shady places and woods, in Yorkshire, Westmoreland, Devonshire, and the Lowlands of Scotland. [Barrowfield Wood near Kendal, by the fall of Lodore near Derwent Water, and in several woods in the North. Mr. WOODWARD.] P. June—Oct.

P. Leafits strap-spear-shaped; segments very entire, bluntish: clusters of capsules at the edges. Oreop'teris.

Fl. dan. 1121–*Bolt.* 22.

Stem smooth, with 2 furrows; 10 to 15 inches high or more. *Wings*, the upper and lower ones alternate; segments strap-spear-shaped, blunt, either entire, or finely serrated. The 2 or 3 lower pair of wings gradually shorter, and the lowest pair often pointing downwards. Mr. Dickson observes, that the fructifications are always at the edge of the lobes, both in the young and in the more advanced state, and that they never become confluent.

Polypodium montanum. Vogler. *P. Thelypteris*. Huds. Lightf. Bolt. *Heath Polypody*. Woods at Castle Howard, Mr. TEESDALE, who observes that the leaves have a very agreeable scent. [Moist woods near Darlington, never on dry hills in that neighbourhood. Mr. ROBSON. In a wood at Old Foot's Well, near Bromsgrove, and in a lane near the Bell Inn at Erdington. Miss READ. More frequent in mountainous situations than any other species. Mr. GRIFFITH. Common in Scotland, but always in somewhat marshy ground, never on dry hills, as Mr. Dickson alledges. Mr. BROWN.] P. July—Oct.

(3) *Leaves winged; wings deeply wing-cleft.*

P. Leaves almost doubly winged: leafits strap-spear-shaped: lobes blunt, finely serrated: stem and midribs chaffy. Fi'lix-mas.

Dicks. h. s.–*Kniph.* 6–*Woodv.* 49–*Bull.* 183–*Tourn.* 310 *to* 312–*Bolt.* 24–*Ger.* 969. 1–*Fuchs.* 595–*J. B.* iii. 738–*Dod.* 462. 1–*Blackw.* 323–*Gars.* 271–*H. ox.* xiv. 3. 6–*Matth.* 1290–*Cam. epit.* 991–*Park.* 1036–*Lob. obs.* 473. 1. *repr. in ic.* 1. 812. 1, *and Ger. em.* 1128.

From $1\frac{1}{2}$ to 4 feet high. Lobes of the wings strap-shaped, the ends rounded. *Fructifications* from 3 to 8 on each lobe, placed in 2 rows near to its base and distant from its edges; none at the end.

Male Polypody. Male Fern. Woods, heaths, stony places. P. June—Oct.*

Thelyp'teris. P. Leafits wing-cleft; lobes very entire, the under surface entirely covered by clusters of capsules.

Hedw. theor. 6–*Schmid.* 11. 1. 2–*Bolt.* 43–*Fl. dan.* 760–*Mapp.* 7. *a, at p.* 106–*J. B.* iii. 739. 1–*Ger.* 981. 3–*Ger. em.* 1135. 1–*Park.* 1041. 1.

Its habit that of P. *Filix-mas.* *Stem* smooth. Old leafits covered with capsules. *Barren leaves* broader and blunter. Linn. *Root* small, creeping. Dickson. *Wings* deeply divided, but the divisions do not reach to the mid-rib. *Lobes* when in seed much contracted, and narrower than before the capsules are fully formed, but this circumstance is very general through the whole tribe.

Marsh Polypody. Acrost. Thelypteris. Bolton. In bogs. [St. Faith's Newton Bogs near Norwich. Mr. Pitchford. Near Bungay, Suffolk. Mr. Woodward. In a moist dell at the foot of Snowdon near Llanberris. Mr. Aikin.] P. July—Oct.

The Polypodium *fragrans* of Huds. adopted by Linnæus is supposed to be only a dwarf plant of this species, but it merits further attention from such botanists as live near Keswick, where Hudson mentions finding it in moist clefts of rocks.

denta'tum. P. Leafits opposite, wing-cleft; lobes sparingly cut at the sides, finely toothed at the ends: stem very slender.

Dicks. h. s.–Dicks. fasc. iii. 7. 1.

Nearly resembles the Polyp. fragile in size and in habit. *Root* small, fibrous, bundled, a little woolly. *Stems* several, slender, pale brown, shining, somewhat scaly at the base. *Leaf* spear-shaped, doubly winged. *Wings* distant, spear-shaped, mostly alternate. *Leafits* egg-shaped, blunt, cut, unequally toothed; teeth distant, blunt, pale brown. Clusters of capsules near the incisions, towards the edge. Dickson.

* The Siberians boil it in their ale, and are fond of the flavour which it imparts to it. The powder of the root is Madame Nouffer's celebrated remedy to expel the tape-worm. She gives the patient a liquid lubricating supper, and, if costive, a common clyster. Early next morning 2 or 3 drams of the root in powder are exhibited mixed with water. If thrown up it must be repeated. The patient must fast two hours, and then take a drastic purge. *See Dr. Simmon's Account of the Tænia.* I have frequently used it, and seldom without the desired effect.

Such is the account given by Mr. Dickson of this new species of Polypodium, which he first discovered in clefts of rocks in the Highlands of Scotland; but though this description and his specific character mention it being doubly winged, neither his own figure, nor the specimens sent out in his Fasciculi of dried plants, authorise us to say that they are so. They are only simply winged, and the wings divided into lobes, nor have they any proper mid-rib. The Polyp. *dentatum* of Forsk. in GMELIN'S *Syst. Nat.* is a different plant.

P. Leafits alternate, triangular, blunt, deeply wing-cleft; lobes sharply toothed at the end: stem very slender. fonta'num.

Lob. adv. 361. 2, *and ic.* i. 810. 1–*Bolt.* 21–*Barr.* 432. 1–*Pluk.* 89. 2, *and* 3–*Ger.* 980. 2.

Its habit that of P. fragile, but the leafits closer together and not so deeply lobed. *Fructifications* in large dots, proceeding not from a roundish scale, but from an oblong white slender valve or chink. LINN. Plant 3 or 4 inches high. *Stam.* pale green, thread-like. *Leafits* alternate. BOLT.

Old walls and rocks. Rocky places near Wybourne, Westmoreland.—Also in Buckinghamshire. BOLT. P. June—Sept.

(4) *Leaves doubly winged.*

P. Primary wings crescent-shaped: leafits rhomboidal, with prickle-like teeth: stem chaffy. aculea'tum.

Mill. ill.–Bolt. 26. 1 *and* 3–*H. ox.* xiv. 3. 15. *f.* 1–*Pluk.* 179. 6, *a young plant only winged.–Pluk.* 180. 1, *fully grown.–Pluk.* 180. 3, *in its middle state of growth.*

Sometimes $\frac{1}{2}$ a yard high. *Leafits* irregularly rhomboidal, with a projecting angle on the upper edge near to the mid-rib. The leafits immediately adjoining to the primary mid-rib are very unequal in size, the uppermost being the largest and having its lower edge parallel to the primary mid-rib. In a young state the leaf is only simply winged, as represented in Bolton's pl. 26, fig. 2.

Prickly Polypody. Woods and shady places. [In a ditch in a meadow at Valley near Bromsgrove. Miss READ. In a ditch near Elmdon House, Warwickshire. Jan.] P. June—Oct.

Var. 2. Leaves sprinkled with a moss-like down. PLUK.

P. Primary wings spear-shaped: leafits strap-egg-shaped, wing-cleft, and serrated with sharp-pointed teeth. spinulo'sum.

Fl. dan. 707.

This has been taken for the Polypod. cristatum, but it is very different from that; of a more delicate and transparent texture,

the leaf-stalk but little, if at all scaly, the opposite leafits on the wings not unequal in size, and the mid-rib of the leafits serpentine. It agrees with it in the disposition of the fructifications, and in the serratures ending in short awns.

[Bogs on Birmingham Heath. Holloways in Devonshire.]

P. July—Sept.

Filix-fœmina. P. Leafits strap-spear-shaped, wing-cleft, acute: stems smooth upwards.

Pluk. 180. 4–*H. ox.* xiv. 3. 8–*Bolt.* 25–*Munt.* 288. 84–*J. B.* iii. 738.

Fructifications egg-shaped, somewhat fringed, solitary. LINN. *Leafits* deeply cut with one or two divisions: the teeth often ending in a short awn. WOODWARD. The most elegant of all our Ferns. One cluster of capsules on each lobe of the leafit. BOLT. So that in a ripening state the whole of the leafit seems covered by them, whilst in the P. Filix-mas the upper end is always bare. The lower pair of leafits on each wing, that is, the pair next to the principal or primary leaf-stalk, stand close to it, and parallel with it, pointing upwards and downwards. The breadth of the leafits varies considerably in different plants, but when they are narrow and the wings distant, the whole has a remarkably light and elegant appearance.

Female Polypody. Moist and shady marshy places. Moist rocky woods; about rivulets, and on heaths. [Lewesdon Hill. Mr. BAKER.]

P. June—Sept.

crista'tum. P. Leafits deeply wing-cleft; segments oblong, blunt, serrated, fringed: clusters of capsules in a double row.

Mull. frid. 2. 4–*Pluk.* 181. 2–*Bolt.* 23.

Fructifications on the upper, but not on the lower leafits. LINN. But with us on all the leafits when the plant is come to maturity. Mr. DICKENSON. In moist rich soil 3 or 4 feet high, and trebly winged; on dry rocks and banks about a foot high, the first pair of wings the largest and the only pair that are triply divided. BOLT. Serratures ending in short awns. WOODWARD. *Stem* scaly all the way up. Lower leaves of the lower wings larger and longer than those opposite to them.

Crested Polypody. Moist woods and shady places in a gravelly soil. In chinks of moist rocks, and old walls; and in marshy places at the root of decaying oaks. [On Ben Bourde, a mountain 7 miles N. W. from Invercauld, Aberdeenshire. Mr. BROWN.]

P. June—Sept.

fra'gile. P. Primary wings spear-shaped; leafits with a few irregular teeth towards the end: stem very slender and brittle.

Var. 1. Primary wings long spear-shaped, acute, distant; leafits distant pointed.

Bolt. 46–*Fl. dan.* 401–*Pluk.* 180. 5.

From 4 to 7 inches high. *Stem* red, bare for about 2 inches at the base; smooth, slender, brittle. *Leafits* more than twice as long as they are broad. In habit approaches nearly to the P. *rhæticum*, but it is not distinctly doubly winged like that plant, nor are the lobes of the leafits regularly serrated at the edges, as in that.

Brittle Polypody. Dry stony places. [Mountains in Wales. Mr. GRIFFITH. Walls about Buxton. Mr. DICKENSON. Near Hyde, Glocestershire. Mr. BAKER. Road from Bourn Heath to Worms ash near Bromsgrove. Miss READ.] P. June—Sept.

Var. 2. Primary wings spear-shaped, acute; leafits crowded.

Bolt. 27–*Barr.* 432–*J. B.* iii. 741. 2–*Seguier.* 1. 1.

From 2 to 6 inches high. *Stem* red, bare for $\frac{1}{2}$ to $1\frac{1}{2}$ inch from the base; smooth, brittle, but less slender than in the preceding. *Leafits* not equal in length to twice the breadth.

Mountains in North Wales. Yorkshire and the other Northern counties. [Near Snowdon on the rocks of Clogwyn dû yr Arddû. Mr. GRIFFITH.]

Var. 3. Primary wings spear-shaped, blunt.

About 3 or 4 inches high. *Stem* red, bare for $\frac{1}{2}$ to 1 inch from the base; smooth, brittle, slender.

This has a general resemblance to the P. *dentatum*, but differs from that in the colour of the stem, in being doubly winged, and in the want of fine teeth at the ends of the lobes.

Mr. Griffith of Garn favoured me with specimens of all these 3 varieties gathered from the same root, and I have seen a single specimen uniting the characters of the 2 former.

P. tri'fidum. Primary wings spear-shaped, blunt; leafits of the lower pair of wings mostly 3-cleft: stem bordered.

E. bot. 163.

Three or 4 inches high. *Stem* brown green, slender, bare for 1 inch or more at the base; edged with a narrow border on each side. *Wings* nearly triangular; leafits 3-cleft, the middle segments sometimes notched.

I am indebted to the liberality of J. Wynne Griffith, Esq. of Garn, near Denbigh, for a beautiful specimen of this plant. It is sufficiently distinct from the *Polypodium fragile*, though in habit much resembling our 3d variety of that species. Both this and the *P. fragile* have their capsules in a globular bag, which seems attached to the foliage in one point only, and readily separates from it. Not having yet adopted the new genus Cyathea, we lament that we could not use the trivial name given to this

plant by Dr. Smith in E. bot. because there is already a Polypod. *incisum* in Gmel. syst. veg.

Cyathea incisa. E. bot. where it is mentioned as having been found by Mr. T. F. Forster, jun. on a wall near Walthamstow, and that he thought it distinct from the P. *fragile*. Mr. Griffith found it on Cwm Idwel.

rhæ'ticum. P. Primary wings spear-shaped, distant; leafits deeply lobed; lobes pretty regularly toothed at the edges.

Dicks. h. s.–Bolt. 45 *and* 2. 6–*H. ox.* xiv. 4. 8.

Seven or 8 inches high. *Stem* red, smooth, slender, convex on one side, bare for 2 or 3 inches from the base. *Wings* distant, spear-shaped, acute; leafits strap-spear-shaped, the edges toothed. Mr. Bolton has very well observed, that the wings are distinct all the way up, not becoming confluent at the top, and that the leafits on the upper side the secondary mid-rib are larger than those on the lower, by which it may be distinguished from the P. *fragile*. The regular serratures on the sides of the lobes also afford a good distinction, the lobes in the P. *fragile* being only serrated towards the end, and that very irregularly.

Shaded rocks, Scotland. Mr. Dickson. Mountains in Westmoreland. Top of Glyder mountains, on the side which hangs over Llyn Ogwan Lake; and near Ffynnon felon. [On walls near Ambleside, Westmoreland. Woodward. On the Leek foad $\frac{1}{4}$ of a mile from Buxton.] P. June—Sept.

(5) *Plant triply winged.*

Dryo'pteris. P. Stem supporting 3-winged or doubly winged leaves.

E. bot. 616.–*Kniph.* 12–*Bolt.* 28–*Trag.* 538–*J. B.* iii. 741. 1–*Lon.* i. 224. 2–*Ger.* 974. 2–*Clus.* ii. 212. 1–*Ger. em.* 1135. 3–*Park.* 1044, *middlemost figure*–*H. ox.* xiv. 4. 19.

Fructifications near the rib of the 2dary wings. Bolt. *Plant* from 5 to 8 inches high. The 3 leaves placed near the end of the stem, one terminating and one on each side. The Rev. Mr. Baker observes that, "at the point where the lower pair of pinnæ branch from the stem the plant forms an obtuse angle and leans backward. This appears to be occasioned by four strong glands on the upper side of the stem and two on the lower. These glands attend the angles formed by the other wings, but decrease as they advance."

Dry stony places in Yorkshire, Lancashire, Westmoreland, and Scotland. [Amongst the rocks at the fall of Lodore on the side of Derwent-water, Cumberland. Barrowfield Wood near Kendal, and other rocky woods in the North. Mr. Woodward. In woods North-east of the road up Frocester-hill, Glocestersh. Mr. Baker. Needwood Forest, Mr. Bagot, In abundance near

the seat of the Rev. Tho. Gisborne at Yoxall, Staffordshire.] P. June—Sept.

Var. 2. Leaves larger. The largest lobes lobed or divided half way down to the mid-rib. Stalk taller, firmer, white, opaque. Bolt.

Bolt. 1. 1.

In White-scars near Ingleton, Yorkshire, and in the Peak of Derbyshire. Bolt.

ADIAN'TUM. *Capsules* forming oval spots, under the ends of the leaves, which are folded back.

A. Leaves doubly compound: wings alternate: leafits wedge-shaped; lobed, on leaf-stalks. Capil'lus-Ven'eris.

Dicks. h. s.–Jacq. misc. ii. 7–*Bull.* 247–*Bolt.* 29–*Tourn.* 317. 2–*Ger.* 982. 2–*Tourn.* 317. 2–*Cam. epit.* 924–*Park.* 1049. 1–*Matth.* 1201.–*J. B.* iii. 752–*Lob. adv.* 361. 1, *ic.* i. 809. 2–*Gars.* 125. *A.*–*Ger.* 982. 1–*Fuchs.* 82–*Trag.* 531–*Dod.* 469. 2–*Ger. em.* 1143. 1.

About 5 or 6 inches high. *Leafits* fan-shaped, with 4 or 5 nicks at the end. Bolt. of a very delicate semi-transparent green, which it retains in a dry state.

True Maidenhair. Rocks and moist walls. Barry Island and Port Kirig, Glamorganshire.—Isle of Arran, near Galloway. P. May—Sept.

TRICHO'MANES. *Fructifications* on the edge of the leaf, solitary, urn-shaped, ending in a thread-shaped style.

Tr. Leaves almost doubly winged: wings alternate, crowded, lobed, strap-shaped. pyxidiferum.

Pet. pter. 13. 13.

Linnæus also refers to Ray Syn. t. 3. f. 3 and 4, but if the opinion be well founded, as I believe it is, that the real Tr. pyxidiferum is not a native of this island, those figures only represent a var. of the Tr. Tunbridgense.

Tr. Leaves winged; wings oblong, forked, decurrent, toothed. Tunbridgense.

Fl. dan. 954–*E. bot.* 162–*Pluk.* 3. 5–*Bolt.* 2. 7–*H. ox.* xv. 7. 50.

Wings sometimes not always, serrated or scolloped. Bolt. *Wings* elliptical, narrow; teeth sharp. Mr. Woodw. *Leaves*, all producing fructifications when growing in an open exposure, but in chinks of shady rocks they become luxuriant, assuming the appearance of T. *pyxidiferum*, and never bearing fructifications. Perhaps in the latter state, it is the plant supposed by the English botanists to be T. *pyxidiferum*. Mr. Griffith. *Capsules* 2 valved, furnished with an elastic ring, and placed round the style-like column within the 2-leaved involucrum. Dr. Smith.

Tunbridge Goldilocks. Hymenophyllum Tunbridgense. E. bot. Moist clefts of rocks and stony places. Near Tunbridge. Amongst the pebbles at Cockbush, on the coast of Sussex. On Dartmore, Devonshire, and on the mountains of Westmoreland, Cumberland, Yorkshire, Wales, and Scotland. [High mountains at the Head of Winandermere, Westmoreland. Dr. Smith. —On rocks in a shady dell, very near to Llanberris. Mr. Aikin.] P. May—Oct.

Var. 2. Fructifications on naked fruit-stalks.

Bolt. 31.

Botanists who can examine this and the preceding in a recent state must decide whether they be not distinct species. Its habit, as represented by Mr. Bolton is considerably different from that in E. bot. and though the latter has indeed fruitstalks springing from the mid-rib, they are not naked, but pass within the substance to the edge of the leaf.

Rocks under Dolbadon Castle near the lake of Llanberris, and on the rock called Foal foot on Ingleborough, Yorkshire. Bolt.

Var. 3. Leaves large, not bearing capsules.

Ray Syn. 3. 3. *at p.* 128, *and* 2 *a young plant.–Bolt.* 30.

Root woolly and hairy. *Stems* winged, brownish black below, green above. *Leaves* thin pellucid, shining, deep green. *Fructifications* none observable. Dill. *in R. Syn.* 127. n. 14. *Leaves* indistinctly waved or scolloped on their edges. Our plant probably only a luxuriant variety of T. *tunbrigense*, their figure, texture, and whole habit being the same, and differing only in size. In cavities excluded from the sun. I have found specimens partaking equally of T. *pyxidatum* and *tunbrigense*, which are figured in t. 2. f. 7. Bolt. I have seen specimens according exactly with Mr. Bolton's figure, from a root which produced other smaller leaves which bore fructifications. Mr. Griffith. In the foreign specimens which I have seen of the true Tr. pyxidiferum the substance of the leaf is strong and opake, not at all like the silky transparency of our plants, and the fructifications are large, urn-shaped, sessile, and brown orange.

Trichomanes pyxidiferum. Huds. and Bolt. but not of Linn. *Cup Goldilocks.* On dripping rocks. At Belbank, half a mile from Bingley, at the head of a remarkable spring, *R. Syn.*—in a little dark cavern under a dripping rock, a little below the spring of Elm Cragg Well. BOLT. P. Aug.

MUSCI.

SPHAG'NUM. Male flower; club-shaped: *anthers* flat: *caps.* on the same plant, sitting; mouth smooth, covered with a lid, without any entire veil.

S. Branches bent downwards. palus'tre.

Hedw. Theor. 12. 42 *to* 45, *and* 13. 46, 47, *hist.* i. 1. 1, *ib.* ii. 3. 9–*Vaill.* 23. 3–*Dill.* 32. 1–*Fl. dan.* 474–*Schmid.* 58. 5–*Pluk.* 101. 1–*Scheuch. it.* i. 5, 4, *at p.* 38–*Lob. ic.* ii. 242. 2–*Dod.* 472. 1–*Ger. em.* 1559. 1–*Park.* 1306. *n.* 1.

The *Capsules* burst with a crackling noise. LINN. *Stems* growing many together, from 3 to 12 inches high, upright, sometimes divided. *Branches* at short distances, 2, 3 or 4 from the same part, heavy and hanging down from abundance of moisture. *Leaves* white, egg-shaped, concave, soft, tiling the branches. *Capsules* at first sitting, but afterwards they attain short fruitstalks. DILL. Involucr. scaly. *Capsules* nearly globular, when open urn-shaped, generally several together at the top of the stem. *Lid* convex, pointed, deciduous.

Grey Bdgmoss. Common peat Bogs. P. July. Aug.

Var. 2. The whole habit more slender; more branched; capsules smaller.

Schmid. 58. 6–*Dill.* 32. 2–*Hedw. hist.* i. 3. 3–*Mapp. at p.* 200. *C.*

Var. 3. Whole plant of a beautiful peach colour.

On Bogs in the New Forest, Hants.

In variety 1 the leafits are concave, oblong, blunt; in 2 flat, awl-shaped, sharp. Are they not distinct species, the first growing in running, the latter in stagnant water? WILLDENOW.

S. Somewhat branched; upright. alpi'num.

Dill. 32. 3.

Schreber conjectures it to be a *Bryum.* LINN. Of a beautiful green. *Capsules* egg-shaped. *Leaves* strap-spear-shaped, pointing 3 ways. NECK. In a dense compact tuft, about a finger's length, sometimes dividing in the middle into 2 or 3

branches. *Leaves* a splendid intense green, long, narrow pointed, straight, stiff. *Capsules* on short fruit-stalks, colour of pale wax, egg-shaped. DILL.

Bogs on Cader Idris, and Snowdon. DILL.—[But I have never found it there in fructification. Mr. GRIFFITH.] See Bryum flexuosum, var. 3.

arbo'reum. S. Branched, creeping: capsules lateral, pointing one way. *See* Fontinalis *secunda*.

PHAS'CUM. *Capsule* egg-shaped, furnished with a veil, but without a lid or only an imperfect one which does not fall off.

(1) *Capsule sitting.*

acau'lon. PH. Stemless: leaves egg-shaped, pointed, approaching.

Schreb. phasc. 1. 1 *and* 2–*Curt.* 276–*Dill.* 32. 11–*Fl. dan.* 249. 3–*Happ.* ii. *Phasc.* 1, *a*–*Neck. meth.* 1. 1, *at p.* 273, *a veil magnified.*–*Pet.* i. 95. 14.

A few lines in length, growing in clusters, assuming rather a globular shape from the convergency of the leaves, which are rather broad, membranceous, concave, soft, nerveless, green, delicate, ending in a short hair which is more conspicuous in the dry plant. *Caps.* little larger than poppy seed, so concealed within the middlemost leaves as to be more readily felt than seen. DILL. Although there is no proper lid to the capsule it opens at the top. The veil leans to one side.

Phascum cuspidatum. Gmelin. *Common Earth-moss.* Heaths, and ditch banks, garden walks, especially in a sandy soil not uncommon, but on account of its minuteness and the leaves secreting the capsules it is very generally over-looked.

A. March.

mu'ticum. PH. Stemless: leaves egg-shaped, concave, converging, not ending in hairs.

Schreb. phasc. 1. 11 *and* 12–*Dill.* 32. 12–*Vaill.* 27. 2.

Whole plant smaller than the preceding, capsules rounder and more shining, red yellow; leaves paler, not ending in a grey hair. *Capsules* ripe a month sooner. DILL.

Phascum acaulon β Linn. Garden walks, hedges, ditch banks. A. Jan. Feb.

subula'tum. PH. Stem short: leaves spear-strap-shaped, upper ones bristle-shaped, but broad at the base.

Hedw. stirp. i. 35–*Schmid.* 58. 1–*Curt.* 275–*Fl. dan.* 249. 2–*Happ.* ii. *Phascum.* 1. *b*–*Dill.* 32. 10–*Vaill.* 29. 4.

Capsules continuing all the summer, reddish and yellowish, in autumn ripening, turning brown, and opening. *R. Syn.* So minute as hardly to be visible if it did not grow in patches; from 2 to 3 lines high. Weis. *Shoots* not branched. *Veil* covering the capsule, conical, scored, blunt, of short duration. Neck. In a rich soil sometimes half an inch high, and with 2 or 3 branches towards the top. *Barren* flower in the bosom of the leaves. *Lid* none. Hedw. Only 3 or 4 lines high, but growing in patches is readily found, and the capsules not larger than a seed of tobacco, are very visible on account of the slenderness of the leaves. Dill. They frequently fall off without opening.

Awl-leaved Earth-moss. Heaths in a sandy soil; ditch banks; not uncommon. A. March—Aug.

Ph. Shoots creeping: capsules lateral. re'pens.

Dill. 85. 16.

Stems creeping, adhering to the bark of trees. *Branches* short, cylindrical, mostly in pairs. *Leaves* short, concave, broad at the base, spit-pointed, clothing the shoot on every side. *Capsules* extremely small; in the bosom of the leaves. Dill.

Trunks of trees in Yorkshire. Dill. P. May.

Ph. Shoots thread-like, jointed, branched: leafits of the serra'tum. involucrum spear-shaped, serrated. Dicks.

Dicks. 1. 1–*Schreb. p.* 8. *t.* 2–*E. bot.* 460.

Extremely minute, at first sight resembling a thread-like Byssus, and would scarcely be obvious to the naked eye if it did not grow in patches. It seems a link which connects the Musci and the Algæ, partaking of the Phascum and the Conferva. It consists of numerous green filaments, which through a glass appear creeping, cylindrical, branched, jointed like a Conferva, the interstices pellucid, the joints a darker green. Branches alternate, forked, awl-shaped at the end. *Capsules* egg-shaped, pointed, sitting irregularly on the sides of the shoot near its base: tawny when ripe. I have not found the veil. It has no lid which separates. The involucrum consists of 3 or 4 spear-shaped leaves, pointed and serrated. Schreber and Weber seem not to have been aware that the jointed shoots belong to the plant. Dicks.

On the north side of Muswell Hill, near Highgate. Dicks. April.

Ph. Shoots thread-like, jointed, branched: leafits of the stolonif'erum involucrum spear-shaped, toothed. Dicks.

Dicks. 7. 2.

It has the habit of the Ph. serratum, but is rather larger, the shoots longer; the space betwixt the joints longer, and the leafits bluntly toothed and reticulated. DICKS.

Discovered by Mr. E. FORSTER, junior, growing on clay near Walthamstow.

alternifo'lium PH. Fertile stems short: barren stems taller, upright: leaves alternate awl-shaped. DICKS.

Dicks. 1. 2.

Barren and *fertile stems* growing intermixed, and forming small green tufts. BARREN SHOOTS undivided, thread-shaped, fully half an inch high. *Leaves* very short, awl-shaped, alternate, rather bulging at the base, expanding at the ends. FERTILE SHOOTS undivided, 1-8th of an inch high. *Leaves* awl-bristle-shaped, as long again as the capsule. *Capsule*, one at the end of each shoot, single, sitting, buried in the leaves, inversely egg-shaped, pale yellow. DICKS.

Alternate-leaved Earth-moss. Bogs. [Gamlingay Bogs, Cambridgeshire. Mr. GRIFFITH.] April.

(2) *Capsule on a fruit-stalk.*

curvicol'lum. PH. Stemless: fruit-stalks crooked: leaves spear-shaped, taper-pointed, expanding.

Dick. 1. 3–*Hedw. stirp.* i. 11.

Plant extremely minute, hardly visible to the naked eye, unless growing in clusters and bearing its swollen capsules. *Involucrum*, leaves straight, strap-spear-shaped; the other leaves egg-spear-shaped. *Fruit-stalks* very much bowed. *Capsules* egg-shaped, brown and mottled when ripe. *Veil* very small. *Lid* with a short beak. Often mixed with Bryum *argenteum*. Ripens in May. HEDWIG. *Leaves* mid-ribbed, as long as the fruit-stalk.

In barren grassy places, near Croydon. DICKS.

pilif'erum. PH. With a stem: leaves oblong, upright, hair-pointed.

Schreb. phasc. 1. 6 *to* 10.

Stem upright, unbranched. *Leaves* spear-shaped, ending in long hairs, tiled upwards, upright but expanding. *Fruit-stalk* extremely short. WULFEN.

ni'tidum. PH. With a stem: capsules not taller than the leaves: leaves awl-shaped, keeled, somewhat bundled.

Hedw. stirp. i. 34–*Dicks.* 1. 3.

Exceedingly small; about 1-8th of an inch high, upright, sometimes sending out one or two branches at the base. *Leaves* slender, bristle-shaped, surrounding the stems and rising above the ends. *Capsules* egg-shaped, taper-pointed, on short fruit-stalks, sometimes from the sides of the stem and bosom of the leaves, but mostly terminating, solitary, or in pairs, naked or distinct, though the leaves extend beyond them; when ripe brownish. DICKS.

Shining Earth-moss. P. axillare. Dicks. i. 2. Bogs on heaths. Sept.

PH. Stemless: fruit-stalk thrice the length of the leaves: rec'tum.
leaves spear-shaped, mid-ribbed, fine pointed.

PLATE XVIII. f. 1.

Fruit-stalk and capsule a rich chesnut red. Fruit-stalks straight, sometimes two from the same root. Leaves 5 or 6. Whole plant the twentieth of an inch in height. Capsule not wrinkled.

Specimens from J. W. GRIFFITH, Esq. who found it amongst trees in the front of Garn House, very near the road leading to Henllan.

FONTINA'LIS. *Capsule* nearly sitting, furnished with a veil, and surrounded by a tiled involucrum.
Male, bud-like, axillary; on the same plant.

OBS. Differing from HYPNUM in nothing bu tthe Capsule not being supported on a fruit-stalk. WEIS.

F. Capsules lateral: leaves acute, keeled, doubled toge- antipyre'tica.
ther, disposed in 3 rows.

Dill. 33. 1–*E. bot.* 359–*Vaill.* 33. 5–*H. ox.* XV. 6. 32–*Kniph.* 12–*Buxb.* iii. 69. 2–*Mich.* 59. 9–*Schmid.* 58. 4–*Hedw. hist.* i. 5. 27; ii. 9. 53; 54, 55, *and* 1. 5.

Shoots a foot long or more, branched. The primary shoo sends out lateral and terminating ones, and these branch out again. NECK. Floating in the water. *Leaves* two or three lines long, and half as broad, very entire at the edge. *Capsules* lateral, in the bosom of the leaves, on very short fruit-stalks, inclosed in a leafy scaly involucrum. *Veil* conical. *Lid* conical, blunt, starting with a spring from the ripe capsule. *Fringe* surrounding a central point. *Seeds* green. DILL.

Greater Water-moss. Upon rocks and roots of trees, in brooks, rivulets, slow streams and ponds. P. June—Sept.*

mi'nor. F. Capsules terminating: leaves egg-shaped, acute, concave: pointing three ways; always in pairs.

Dill. 33. 2–*E. bot.* 557.

Leaves doubled together and keeled, on the thicker branches in pairs. LINN. Shoots 4 inches long, in rapid streams half a yard or more, very much branched. *Branches* 3-sided, ending in a sharp point. *Capsules* egg-shaped, on short fruit-stalks. WEBER. *Shoots* shorter, more branched, and leaves smaller, thicker and blunter than in the F. *antipyretica*. DILL.

Lesser Water-moss. Banks of the Thames on the walls of Lambeth Palace, and on the banks of the Isis at Oxford. DILL. P. Aug—Oct.

squamo'sa. F. Capsules lateral: leaves tiled; awl-spear-shaped.

Dicks. h. s.–Hedwig. stirp. iii. 12–*Dill.* 33. 3–*J. B.* iii. 778. 3.

Leaves sometimes spear-shaped, pointed. Very nearly allied to F. *antipyretica*. HUDS. *Capsules* egg-shaped, sitting. NECK. Long and slender; *fertile* stem generally forked; *barren* stem more branched; 4 to 6 inches long. *Leaves* long spear-shaped, partly embracing the stem, so slender as to appear awl-shaped to the naked eye. HEDWIG. *Shoot* 4 to 12 inches long, branched, floating in the direction of the stream, slender, black, bare near the root. *Leaves* dark green, smooth, shining, black when dry. *Branches* 3-sided. *Capsules* on the side of the branches sitting, egg-shaped, immersed in a leafy involucrum. DILL. The lower parts of the stems losing their leaves resemble horse-hairs matted together. Mr. STACKHOUSE. The capsules are usually produced on the shoots of the preceding year, or on the still older branches; never on the young shoots. Mr. GRIFFITH.

Scaly Water-moss. Mountain rivulets in Wales, the north of England and Scotland. [In the rivulet by the old castle, near Llanberris. Mr. GRIFFITH. Rivulets near Penzance. Mr. STACKHOUSE.] P. June—Oct.

penna'ta. F. Capsules lateral: leaves pointing 2 ways; expanding.

Hedwig. stirp. iii. 19–*Vaill.* 27. 4–*Hall. enum.* 3. 2, *at p.* 109, *hist.* 46. 2, *at* iii. *p.* 56–*Dill.* 32. 9–*Schmid.* 58. 2.

* The Scandinavians line the inside of their chimnies with this to defend them against the fire, for, contrary to the nature of all other moss, this is hardly capable of burning.

Leaves with wavy wrinkles. *Capsules* sitting; nearly cylindrical. NECK. *Shoots* creeping and forming compact patches. *Branches* one inch long or more. *Leaves* closely compacted, about a line in length, and one fourth of a line in breadth. *Capsules* solitary or in pairs, chiefly on one side the branches, one line long and half as broad, smooth, green, changing to reddish. *Mouth* without a ring, closed with a white fringe. *Lid* pointed. *Veil* but half the size of the capsule; smooth. *Involucr.* composed of spear-shaped, pointed, shining leafits, taller than the capsule and closely embracing it. POLLICH. *Stem* thread-shaped, rigid; branches in opposite directions, decumbent with age. *Leaves* without veins.

Neckera pennata. Hedwig. *Hypn. pennatum.* Gmel. *syst. veg. Feathered Water-moss.* Trunks of trees in the woods about Troutbeck and Ambleside, Westmoreland. P. Aug.—Oct.

F. Capsules axillary: leaves strap-bristle-shaped, pointing one way; those of the receptacle very long, convoluted, awl-shaped. DICKS. ii. 1. capilla'cea.

Dill. 33. 5.

Shoots 5 to 7 inches long. *Branches* somtimes divided. *Involucrum* long, from the bosom of the leaves, chiefly where branches arise; out of these come forth, *Capsules* green, small, egg-shaped. DILL.

Hair-like Water-moss. Mountain rivulets in Scotland.

F. Capsules lateral: leaves mostly pointing one way, elliptical, bluntish, those of the involucrum spear-shaped, pointed. DICKS. ii. 2. alpi'na.

Dicks. ii. 4. 1.

Leaves short, twisted when dry, somewhat curled. *Capsule*, together with the involucrum, thrice as large as the leaves. DICKS. *Fringe* simple, its fibres twisted. Mr. BROWN. *Fruit-stalk* nearly as long as the capsule. Foliage black when dried.

Alpine Water-moss. On rocks and stones in the alpine rivulets of Scotland. [On stones in Bala-lake, and rivulets about Llanberris, also in many small rivulets about Garn, Denbighshire. River Clwyde not 10 yards above high water mark, in plenty: so that it is not exclusively alpine. Mr. GRIFFITH. On large stones on the side of Loch Tay which are occasionally under water. Mr. BROWN.] Aug.

F. Branched, creeping: capsules lateral, pointing one way: leaves egg-shaped, taper-pointed. secun'da.

Hedw. Stirp. 3. 15–*Dill.* 32. 6–*Vaill.* 27. 17.

Deep green. *Branches* sometimes subdivided. *Leaves* short, numerous, triangular, concave. *Capsules* oblong, on very short fruit-stalks, on every part of the stem, pointing one way, nearly enclosed by an involucr. of narrow leafits, ending in hairs, very numerous. *Lid* spit-pointed, brown. DILL. An inch high, stiff, but not upright, more or less branched at the base.

Neckera heteromalla. Hedw. *Hypn. heteromallum*. Gmel. *syst. veg.* *Sphagnum arboreum*. Huds. On trees, in orchards. On apple trees in Cornwall. Mr. STACKHOUSE. P. Dec.—Feb.

BUXBAU'MIA. *Capsule* on a fruit-stalk: *outer fringe* with 16 teeth; *inner* membranaceous, plaited.

Male, bud circular.

folio'sa. B. Stemless: capsules nearly sitting, surrounded with leaves.

Dicks. h. s.–Schmidel. buxb. 2, *lower part of the plate, consisting of the figures distinguished by Roman numerals.–Hall. enum.* 3. 3, *at p.* 109; *hist.* 46. 3, *at* iii. *p.* 56–*Dill.* 32. 13–*Fl. dan.* 249. 1–*Happ.* ii. *Phascum* 1, *the central plant–Hall. it. helv.* 2. 3, *in opusc. at p.* 308.

Leaves of the involucrum awned. WILLDENOW. *Leaves*, the lowermost open, oblong, the uppermost upright, spear-shaped, taper-pointed. *Capsule* sitting. HUDS. 460.

Phascum montanum. Huds. *Phascum maximum*. Lightf. On earth upon rocks near Llanberris in Caernarvonshire. DILL. 253, and on Hartfell mountain near Moffat. SHEFFIELD *in Huds.* [Cwn Cennog Rocks, also about Craig du, by the road side near Llanberris. Mr. GRIFFITH.]

A. Sept, Oct. DILL.—May—Aug. HUDS.

SPLACH'NUM. *Capsule* cylindrical, veil and receptacle very large; *fringe* with 8 teeth.

Male, a bud on a different Plant; circular terminating.

sphæ'ricum. SPL. Receptacle globular: leaves spoon-shaped but tapering to a slender point.

Hedwig. stirp. ii. 16–*E. bot.* 785.

Fruit-stalk very long, greenish and reddish brown. *Capsule* very small. *Lid* blunt. *Receptacle* green. LINN. THE SON. *Stem* upright, hardly one inch high, seldom branched. *Leaves* distant, alternate, spoon-shaped but tapering to a point. *Fruit-stalk* very long, (3 or 4 inches,) upright, terminating, tawny at bot-

tom, green above. *Receptacle* large, globular, green. *Capsule* cylindrical, blunt. *Lid* blunt. *Fringe* 8 pair of teeth, yellowish. HEDWIG. *Fruit-stalks* sometimes 4 or 5 inches high.

Mountains near Stirling. Dr. BUCHANAN *in Dicks.* p. 3. [Growing on cow-dung near the old castle at Llanberris; also about Llyn Aled, Denbighshire. Mr. GRIFFITH.]

SPL. Receptacle nearly globular: leaves battledore-shaped, distant. vasculo'sum.

Hedw. stirp. ii. 15.

Like *S. ampullaceum*, but in that species the receptacle is more top-shaped and yellower; in this nearly globular and blood-coloured. *Leaves* egg-shaped, pointed. LINN. *Barren* stems 2 inches, fertile ones one inch long, upright, unbranched. *Leaves* spatula-shaped, bluntish, alternate, distant. *Fruit-stalk* one and a half inch, upright, red. *Receptacle* large, pear-shaped, blood red. *Capsule* cylindrical, upright, brownish yellow. *Fringe* simple, composed of 8 teeth, in pairs. HEDWIG.

Phascum pedunculatum. HUDS. ed. i. adopted by Linnæus. Upon bogs and cow-dung, and on the points of rocks on the tops of the Highland mountains, as Ben Lomond, and in the Isle of Sky and elsewhere. LIGHTF. 697.—On Scarbrae Moss in the parish of Kirkmichael. Dr. BURGESS. On mountainous moist heaths in Yorkshire, Westmoreland, and Wales.

A. June—Oct. HUDS.—P. HEDWIG.

SPL. Receptacle cruet-shaped: leaves arrow-spear-shaped, acute. sagittifo'lium

PLATE XVIII. f. 2.

Leaves bordered, arrow-shaped but slender; mid-rib coloured. *Caps.* with 8 single teeth. Mr. GRIFFITH. About 1 inch high. *Stem* thickly clothed with leaves. *Fruit-stalks* from the last year's shoots, about $\frac{1}{2}$ inch long; not much taller than the shoots of the present year. *Capsules* nearly cylindrical.

[This plant was first discovered, and specimens communicated to me by J. WYNNE GRIFFITH, Esq. who gathered it about Llyn Idwel; also on the bog by the old castle near Llanberris.

SPL. Receptacle inversely bottle-shaped: leaves spear-shaped, acute, generally serrated. ampulla'ceum.

E. bot. 144—*Hedwig. stirp.* ii. 14—*Fl. dan.* 822—*Dill.* 44. 3—*Vaill.* 26. 4—*H. ox.* xv. 6. 10—*Buxb.* ii. 1. 1.

Receptacle empty, transparent, an extension of the fruit-stalk. LINN. *Stem* single or forked, from one to two inches high, upright, but feeble, and supported by other collateral stems. *Leaves* spear-shaped, acutely pointed. *Stamens* and pistils on

the end of the same shoot. *Veil* bell-shaped. *Capsule* slender, cylindrical, upright. *Receptacle* large, shaped like an inverted decanter. *Lid* convex. *Fringe* single, of 8 pair of teeth. HEDWIG. *Fruit-stalks* crimson, 1 to 3 inches long. *Veil* very small, deciduous.

Purple Bottle-moss. Turfy bogs, but only where the dung of animals has fallen. LINN. Bogs and marshes, and often upon cow-dung. LIGHTF. Bogs about Hitchin Ferry near Southampton, and by W. Wickham, and Addington near Croydon. R. *Syn.* Flowers in May, ripens its capsules in July. P. HEDW. [Geldestone Fen near Bungay, Suffolk. Mr. STONE.]

A. March—May.

angusta'tum. SPL. Receptacle egg-shaped: fruit-stalk very short: leaves serrated upwards, hair-pointed.

Hedw. stirp. ii. 12.

Upright, not branched, near one inch high. *Leaves* larger towards the top of the plant, sometimes a little toothed towards the end. *Fruit-stalk* hardly rising above the leafy involucrum. *Capsule* cone-shaped, but lopped, leaning a little. *Mouth* fringed with 8 pairs of teeth. *Veil* oblique. HEDWIG.

In moist alpine situations in Scotland. DICKS. ii. 3. P.

Brewe'ri. SPL. Receptacle oblong-egg-shaped: leaves spear-shaped, very entire.

Hedw. stirp. ii. 38.

Original stem hardly more than an inch long, but branching out shoot upon shoot to several inches. *Fruit-stalk* about one inch long, upright. *Receptacle* egg-shaped, lopped. *Capsule* cylindrical. *Lid* short. *Ring* none. *Mouth* fringed with 16 sharp red teeth. *Veil* small. HEDWIG.

Spl. fastigiatum. DICKS. Moist heaths near Llyn Dwythwch, always on rotten cow-dung. BREWER in *Dill.* 345. Oct.—Jan. P.

ova'tum. SPL. Receptacle inversely egg-shaped: leaves egg-spear-shaped: stem none.

Dill. 44. 4—*Ray* 3. 2, *at p.* 128.

Leaves broad, shining. *Fruit-stalks* golden yellow. DILL. A different plant from the Splachnum *vasculosum.* LINN. to which Huds. improperly referred it. DICKS. II. 2.

Rotten spongy ground, as in the pastures called Emott Moor, Lancashire. Also in Montgomeryshire. DILL. On Ben Nevis. DICKS.

mnioi'des. SPL. Receptacle inversely conical; capsule egg-cylindrical: leaves spear-shaped, very entire, ending in a long taper point.

Hedw. stirp. ii. 11–*E. bot.* 786–*Fl. dan.* 192.

Fertile shoots upright, undivided. *Barren* shoot generally branched. *Leaves* very entire, ending in a long point. *Fruit-stalk* upright, terminating, about half an inch long. *Capsule* upright, egg-shaped. *Receptacle* an inverted cone. *Lid* flat, bluntly pointed. *Fringe* eight pairs of teeth, broad, united. *Veil* slender. HEDWIG. In the star-bearing shoots the edges of the leaves are sometimes set with hairs. Mr. GRIFFITH. The capsule is larger than the inversely conical receptacle, but in Spl. Breweri the receptacle is egg-shaped and larger than the cylindrical capsule. In both the leaves are with or without hair-like points, but in the Spl. Breweri the leaves are narrower and the points longer.

Mountainous places. DICKS. I. 2. [Near Llyn Idwell, Caernarvonshire. It frequently occurs upon the dung of foxes and badgers, which are very numerous about Snowdon. Mr. GRIFFITH.] P.

SPL. Capsules inversely conical: leaves egg-oblong, serrulated upwards, awn-pointed. ten'ue.

PLATE XVIII. *f.* 3–*Dicks.* 4. 2.

Fertile shoots $\frac{1}{2}$ inch high. *Leaves* concave, inversely egg-shaped, entire, bordered, reticulated, the meshes confluent, keel curved, serrulated, ending abruptly in a serrulated awn-like point. *Fruit-stalks* 1 to $1\frac{1}{2}$ inch high, the lower half bright pink, the upper half and the capsule dark purple. *Capsule* a continuation of the fruit-stalk, inversely conical, a little leaning to one side; teeth 16, in pairs. *Veil* extinguisher-shaped, but blunt, as if lopped. *Barren* shoots, terminated by rosaceous cups; all the leaves spear-shaped, serrulated, ending in fine points; the sides approaching. Mr. GRIFFITH. Approaches very near to S. *urceolatum*, from which it differs in the habit of its leaves, its slender and almost cylindrical receptacle. DICKS. S. *purpureum* of Bot. Arr. *ed.* 3.

On Ben Lawers in the Highlands. [On cow-dung about Llyn Idwell. Mr. GRIFFITH.] P. June, July.

SPL. Receptacle inversely conical: leaves spoon-shaped, bristle-pointed. urceola'tum.

Hedwig. stirp. ii. 13.

About one inch high, simple or forked, one fruit-stalk on each branch. *Leaves* spoon-shaped. *Fruit-stalk* upright, near an inch high. *Receptacle* an inverted cone. *Capsule* egg-shaped, cylindrical when old. *Lid* conical, blunt. *Fringe* of 8 teeth, in pairs, orange-coloured. HEDWIG.

Highlands of Scotland. On Ben High. P.

frœlichia'-num. SPL. Capsule a club-shaped termination of the fruit-stalk: leaves battledore-shaped.

Hedw. stirp. iii. 40.

Leaves folded when dry; with much moisture they lose their colour at the edges, thence attaining a membranaceous appearance. The nerve or keel does not extend to the extremity of the leaves. *Fruitst.* pale upwards, of a fine pink colour near the base. *Caps.* a continuation of the fruit-stalk, inversely egg-shaped. I have not observed any teeth. Mr. GRIFFITH. Plant about an inch high. *Leaves* of a beautiful green, broadest at the end; mid-rib indistinct, hardly discernible in the lower leaves. *Fruitst.* $\frac{1}{2}$ inch long. *Receptacle* very short, and only to be distinguished from the fruitst. and caps. when the latter is ripe. Hedwig says the mouth of the capsule has 8 pair of teeth, which always stand upright and never expand, as in the other species.

Specimens sent me by J. W. GRIFFITH, Esq. who first discovered it, growing on the eastern side of Snowdon, about 150 yards from the summit. P. Autumn.

POLY'TRICHUM. *Capsule* with a veil: outer fringe with 32 teeth.

Male, a circular bud, on a different plant; terminating.

commu'ne. POL. Stem simple; proliferous: leaves strap-spear-shaped, serrulated: capsules oblong, 4-sided: veils woolly.

Schmid. 59–*Dill.* 54. 1–*Happ.* i. *Polytrich.* 1–*Mich.* 59, 1. *I, E. M, O, P, Q, R.–Blackw.* 375–*Vaill.* 23. 8–*Ger.* 1371. 3–*Gars.* 129–*Fuchs.* 629. 1–*Trag.* 528. 1–*J. B.* iii. 760. 1–*Lon.* i. 222. 3–*Dod.* 475. 2–*Ger. em.* 1559, *right hand fig. of the* 3 *lowermost*–*Barr.* 251. 3–*Kniph.* 12–*Trag.* 946, *the tallest of the figures, rising from a bed of Hypnum sericeum.*–*Park.* 1052, *right hand fig. of the two uppermost*–*Lob. obs.* 645. 2. *ic.* ii. 243–*Ger. em.* 1559. 2–*Ger.* 1370. 2–*Park.* 1307. 3.

Stems several inches high, seldom branched. *Leaves* near half an inch long, slender, pointed, turning back, finely serrated. *Fruit-stalks* terminating, solitary, two to 4 inches long, surrounded by an involucr. at the base. *Capsule* 4-sided; mouth fringed. *Veil* very hairy, hanging down below the capsule, ragged. WEIS. From 4 to 12 inches high, stiff, straight. *Fruit-stalk* golden red. *Veil* tawny. DILL.

Great golden Maidenhair, or Goldilocks. Woods and moors in wet boggy places. P. May, June.*

Var. 2. Leaves shorter and less flexible. DILL.

Dill. 54. 2–*Vaill.* 23. 6–*Fl. dan.* 295–*H. ox.* XV. 7. 6 *and* 8–*Lob. ic.* ii. 243. 1–*Ger. em.* 1563. 14–*Park.* 1308. 9.

Shoots much shorter than in var. 1, and mostly branched. WEIS. *Veil* double, the outer one hairy, the inner one much smaller, white, smooth, membranaceous. LEERS. *Leaves* sharp-pointed, very entire. *Fruit-stalks* two inches long. POLLICH. Whole plant smaller than the preceding, except the *Veil*, which is larger and more pyramidal. *Stem* seldom more than one inch high, seldom branched. DILL. Female plant with one single tuft of leaves at the top of the stem, the lower part of which is naked. *Recept.* orbicular. *Veil* single. *Lid* acutely conical, hanging over the capsule. *Male*, about an inch of the stem covered with leaves; and supporting at its top a tiled receptacle in the hollow of which are the filiforum male organs. Mr. STACKHOUSE. Mr. Griffith thinks this distinct from the preceding, the capsule having 64 teeth, whilst in that it has only 32; but such as I have examined have 64.

On hills, dry or wet. P. May, June.

Var. 3. LINN. Leaves terminating in hairs.

Happ. i. *Polytr.* 2–*Dill.* 54. 3–*Vaill.* 23. 7–*Buxb.* i. 62. 3, *a barren plant.*

Stems not more than half an inch long, simple, leafless below. *Leaves* entire at the edges, ending in grey hairs. *Fruit-stalk* terminating, about one inch long. WEIS. *Fruit-stalks* half an inch high, or a little more. *Capsule* with its veil, two lines long, and one broad. POLLICH. *Leaves* bent inwards a little, not serrated, terminating suddenly in a long whitish hair. *Fruit-stalks* and their sheathing involucrums purple. DILL. Barren and fertile plants in distinct patches.

Dry woods and sandy barren heaths. Spring.

POL. Shoots simple: leaves strap-spear-shaped; indistinctly serrated upwards: capsules roundish. subrotundum.

Hedw. stirp. i. 13–*Curt.* 102–*Dill.* 55. 6–*H. ox.* XV. 7. *row* 2. 7–*Pet. mus. f.* 22–*Vaill.* 26. 15, *veil wanting.*

Veil open, larger than the capsule. LINN. *Leaves* obscurely serrated. *Capsules* roundish, nodding. HEDWIG. *Leaves* sometimes slightly serrated towards the point. *Capsules* nearly as broad as they are long.

Mnium polytrichoides. Linn.—*Polytrichum polytrichoides.* HUDS. 470. *Pol. nanum.* HEDWIG. Heaths. Muddy soil. [Spink's

* When the Laplanders sleep all night in the woods, they make themselves beds of this moss; and the bears collect it for the same purpose. Squirrels and birds use it in making their nests.

Grove in a dry ditch. Mr. STONE. Commons about Kinver in large patches.] P. May.

aloi'des. POL. Shoots simple: leaves spear-shaped, serrated at the end: capsules cylindrical: veil woolly.

Hedw. stirp. i. 14–*Dil.* 55. 7–*Buxb.* i. 63. 1–*Vaill.* 29. 11.

Stem near half an inch high, seldom branched. *Fruit-stalks* growing to the length of an inch, fixed rather below the top of the stem. *Caps.* cylindrical, upright, but leaning as it becomes older. *Veil* larger than the capsule. WEIS. *Shoots* proliferous when old. *Leaves* serrated. *Capsule* whitish when ripe. *Receptacle* none. LEERS. *Leaves* awl-shaped, serrated, opake, reddish near the point, with an appendage somewhat broader than themselves. *Caps.* contracted beneath the rim, tapering at the base. Mr. GRIFFITH. *Leaves* serrulated at the ends and also on the back of the mid-rib. *Capsules* twice as long as they are broad.

Polytrichum nanum. HUDS. 470. *Pol. aloides.* HEDWIG. Heaths. Muddy soil. [Near Spink's Grove. Brome, near Bungay, Suffolk. Mr. STONE.—Edgbaston Plantations.] P. March—July.

Var. 3. Leaves strap-shaped, serrated, pellucid, with an appendage of the same width: capsules roundish, not tapering at the bottom. *Fem.* plants grey green. *Male* darker coloured; they grow in distinct patches. *Leaves* hair-pointed. *Fruit-stalk* and veil orange coloured. *Male* flowers tiled, cup-shaped, sitting, terminating, red. Mr. STACKHOUSE.

[Ditch banks and road sides about Henllan, Denbighshire. Mr. GRIFFITH. Hills in Cornwall, common. Mr. STACKHOUSE.] Spring.

hercy'nicum. POL. Shoots rarely branched: leaves spear-shaped, fleshy: capsules urn-shaped, upright: veils with scattered hairs.

Hedw. stirp. i. 15.

Stem upright, undivided, 1 inch long. *Leaves* strap-shaped, keeled, very entire, bowed in, alternate, nearly upright, pointed, naked. *Fruit-stalk* terminating, solitary, upright, an inch long. *Veil* conical, pointed, pale. *Capsule* upright, oblong, or cylindrical, the mouth between toothed and fringed. *Lid* conical, somewhat pointed. HUDS. *Mouth* fringed with 32 short teeth, connected at the base. HEDWIG. *Stars* or male buds formed of 5 spoon-shaped pointed leaves. Mr. GRIFFITH. *Caps.* urn-cylindrical, rather narrower in the middle.

Bryum incurvum. HUDS. Pastures and rocks about Llanberis. Mr. DAVIES. In the Highland mountains. DICKS. P. June—Oct.

POL. Shoots very much branched: leaves spear-shaped, toothed: fruit-stalks terminating: capsules egg-shaped. alpi'num.

Dill. 55. 4–*Hall. enum.* 3. 6. *at p.* 109; *hist.* 46. 6. *at* iii. *p.* 56–*Fl. dan.* 296.

Shoots from $\frac{1}{2}$ to 2 inches long; very much branched. *Leaves* slightly toothed. *Capsules* egg-shaped, leaning when ripe. *Lid* conical, beaked. *Mouth* with a ring; fringe fine, short, upright, white. WEBER. *Caps.* unequally distended, green, blackish when old. *Lid* saffron-colour, its point white. DILL. From 2 to 3 inches high.

Mountainous heaths in the North of England, and mountains of Wales and Scotland. P. June, Aug.

β HUDS. *P. urnigerum*, which see.

POL. Shoots very much branched: leaves spear-shaped, tooth-serrated: fruit-stalks axillary: capsules cylindrical. urni'gerum.

Dill. 55. 5–*Vaill.* 28. 13–*Fl. dan.* 297.

Capsules when ripe nodding. LINN. Two or 3 inches high; with lateral branches, somewhat forked, rising to nearly an equal height. *Fruit-stalks* lateral, two or three inches high. *Involucr.* red. *Capsule* cylindrical egg-shaped, tawny, upright, leaning as it ripens. *Lid* yellow, beak white. *Mouth* with a ring, and covered by a white membrane. *Receptacle* none. *Barren shoots* unbranched, 2 inches high, stellated at the ends. LEERS. Beak of the lid very slender. Mr. GRIFFITH.

At the foot of Cader Idris. DILL. [At Roslin, Rivelstone, and other places near Edinburgh. Frequent by road sides in the North of Ireland; also in the Highlands of Scotland. Mr. BROWN. Near the road side between Denbigh and Voylas, by the rivulet before you arrive at a place called Pensylvania; and on Cader Idris with the shoots hardly $\frac{1}{3}$ inch high, though the fruit-stalks as tall as usual. Mr. GRIFFITH.] P. June—Aug.

MNI'UM. *Capsule* with a veil: *fringe* with 16 teeth; sometimes though rarely with 4.

Male. *Bud* circular, rarely knob-like, mostly on a separate plant.

(1) *Capsules upright, cylindrical.*

MN. Capsules slender; lid needle-like: leaves spear- acicula're. shaped, upright, mostly pointing one way.

Dicks. h. s.–Hedw. stirp. iii. 33–*Dill.* 46. 25.

One or $1\frac{1}{2}$ inch high. *Branches* upright. *Leaves* crowded.

Fruit-stalks near an inch high, dark red; on the ends of the younger branches. DILL. *Leaves* spear-shaped. *Fruit-stalks* not half an inch higher than the tops of the shoots.

Br. aciculare. Linn. *Dicranum aciculare.* Hedwig. On stones thinly covered with mould near Llanberris, Caernarvonshire, and in the West Riding of Yorkshire. DILL. In the Highlands and Lowlands frequent. LIGHTF. [Rocks on the side of the hill about 50 yds. above Garthmeilio, the seat of R. W. Wynne, Esq. Denbighshire. Mr. GRIFFITH.] P. May—Oct.

Var. 2. Stems trailing: leaves somewhat open. HUDS.

Fl. dan. 1001. 1–*Dill.* 46. 26–*Hall. it. herc. in opusc. p.* 152. *f.* 1 *and* 2, *Bryum, &c.*–*Vaill.* 27. 16–*Pet. mus. cent.* i. *t.* 1, *f.* 74–*H. ox.* XV. 5. *row* 4. 29.

Shoots branched, floating in the water or resting on stones. *Leaves* brown green. *Fruit-stalks* short and blackish. *Capsules* oblong, straight, dark green. *Veil* black. DILL.

On large stones that lie in the rivulets in the moors of the Peak of Derbyshire. PET. and in the mountain torrents near Llanberris, Caernarvonshire. DILL. [In the first brook after crossing Pont y Alwen, between Denbigh and Cerrig y druidion. Mr. GRIFFITH.] P. Aug.

Var. 3. Shoots slenderer, upright; leaves pointing one way.

Like var. 2, but shorter, less branched, more upright, and of a yellower green. Mr. GRIFFITH. Grows with var. 1.

pellu'cidum. MN. Stem simple: leaves egg-shaped.

Schmid. 3–*Fl. dan.* 300–*Dill.* 31. 2–*Hall. enum.* 4. 8. *at p.* 118; *hist.* 45. 8. *at* iii. *p.* 41–*Vaill.* 24. 7.

Shoots an inch long, seldom branched. *Leaves* in 4 rows; mid-rib purple, ending in a point. *Fruit-stalks* terminating, an inch long, pellucid, whitish. *Capsules* cylindrical, yellowish. *Veil* very long. WEIS.

Tetraphis pellucida. Hedwig. Woods. Moist shady places, and decayed roots of trees. A. Jan.—July.

Var. 2. Leaves exceedingly narrow, and pellucid.

R. Syn. p. 78. *n.* 5–*Dill.* 31. 2. *E. F.*

Heaths near Woolwich. Mar. *R. Syn.*

scopa'rium. MN. Shoot branched: leaves strap-spear-shaped, bent back, pointing one way.

Dicks. h. s.–*E. bot.* 354–*Dill.* 46. 16–*Curt.*–*Vaill.* 28. 12–*Kniph.* 6–*Buxb.* ii. 4. 1–*Fl. dan.* 824. 1–*H. ox.* XV. 7. 11 *and* 13.

Grows in dense patches, branched, nearly upright, 1 to 3

inches high. *Leaves* slender, long, ending in a long sharp point, expanding. *Fruit-stalks* 1 or 2 inches high, generally solitary. *Capsules* cylindrical, thick, a little crooked, scored. *Lid*, beak as long as the capsule. *Mouth* toothed. *Veil* long. Weis. Frequently several fruit-stalks in one involucrum. Willdenow.

Bryum scoparium. Linn. E. bot. *Dicranum scoparium.* Hedwig. Heaths, woods, trunks of trees, shady banks, and dry pastures. P. Feb. and Mar. Curt. June and July. Huds. April—July. Lightf.

(2) *Capsules leaning, roundish.*

Mn. Capsules roundish; lid blunt: shoot sometimes branched, upright: leaves spear-shaped, slender, bent inwards at the points. — fonta'num.

Dill. 44. 2–*E. bot.* 390–*Vaill.* 24. 10–*Fl. dan.* 298–*Happ.* iii. 7–*H. ox.* xv. 6. *row* 3. 8–*Mich.* 59. 4–*Pluk.* 47. 2.

The old shoots covered with brown knap, and buried 3 inches deep. From these proceed slender cylindrical shoots, some of which end in stars. *Fruit-stalks* 2 inches long; proceeding from the shoots of the preceding year. Neck. Readily known by its stiff habit. *Shoots* 2 to 4 inches long. Weis. *Leaves* serrated, open, in the young shoots mostly pointing one way. In this species, and also in the Mnium *palustre*, the fertile and barren shoots adhere so closely at bottom as to appear but one plant. Leers.

Br. fontanum. Huds. [Low wet meadows, turf bogs, and springs, Earsham. Near Bungay, Suffolk. Mr. Stone. Cold clear streams in Westmoreland on the sides of hills. The veil falls off in May. Mr. Gough.] P. May—Aug.

Mn. Capsules pear-shaped; lid blunt: shoots rarely branched: leaves oblong-spear-shaped, blunt. — uligino'sum.

Dicks. h. s.–Hedwig. stirp. i. 1 *and* 2–*Dill.* 49. 58.–*Schmid.* 57. 4.

Shoots very short. *Fruit-stalks* 3 inches long, terminating. *Capsules* dull yellow, inversely egg-shaped. *Lid* blunt. Growing in patches. *Leaves* scattered, 2 lines or more in length. *Fruit-stalks* terminating. *Capsules* upright, afterwards bending a little; 1 line long. *Lid* short, pointed, white. *Veil* smooth, reaching but half way down. Pollich. Primary stem not branched, but after bearing fruit it sends out a new shoot from its extremity, as is the case with many Mosses with terminating fruit-stalks. *Stamens* and *pistils* in the same or in separate flowers. *Ring* none. *Fringe* double, 16 teeth in each. The roots are so closely attached together, that without great care it breaks off, and the plant appears without a stem.

HEDWIG. Short, sitting, sometimes undivided, sometimes with 1 or 2 branches. *Leaves* green, narrow. *Fruit-stalks* about 2 inches high, of a shining gold colour. DILL.

Wet meadows, in dense patches. *Bryum trichodes.* Linn. *Maesia uliginosa.* Hedwig. P. May, June.

(3) *Capsules leaning, oblong.*

sim'plex. MN. Capsules egg-oblong: fruit-stalks lateral: leaves awl-shaped.

Hedw. stirp. ii. 34–*Dill.* 50. 59–*H. ox.* xv. 7. *row* 2. 19–*Buxb.* iv. 65. 2.

Shoots ½ an inch long. *Fruit-stalks* coloured, standing on the ends of the young shoots, but on the rib of the old ones. NECK. Not branched, often 1 inch long, growing in patches. *Leaves* crowded at the ends of the stem, hair-like, not crisp when dry. *Fruit-stalks* 1 or 2 together, 8 or 9 lines long. *Capsule* inversely egg-shaped. POLLICH. *Lid* rather broader than the capsule, beaked. *Mouth* elegantly toothed. DILL. With 16 teeth in a single row, purplish. HEDWIG.

Br. rubrum. Huds. ed. i. *Br. simplex.* Linn. *Dicranum varium.* Hedwig. Grassy sandy places.

A. Mar.—May. P. Hedwig.

heteromal'lum. MN. Capsules egg-shaped; lid taper-pointed, bent: shoot seldom branched: leaves bristle-shaped.

Hedw. stirp. i. 26–*Vaill.* 27. 7–*Dill.* 47. 37–*Fl. dan.* 479–*H. ox.* xv. 6. *row* 3. 5, *and in* 7 *the leaves straight*–*Buxb.* ii. 2. 8.

In habit resembling the Mnium *scoparium*, but much smaller. *Capsules* egg-shaped. *Lid*, beak short. WEIS. *Stem* ½ inch high, upright, but not straight. *Leaves* not curled when dry. *Barren flower* always terminating. *Fruit-stalks* upright, single, or in pairs. *Veil* opening at the side, deciduous. *Lid*, beak bent. *Fringe* of 16 teeth. HEDWIG. Seldom branched. *Leaves* hair-like, fine green, gradually narrowing from the base, mostly pointing one way. *Fruit-stalks* ½ to 1 inch high, green, changing to fine red, sometimes in pairs. *Veil* pale green. DILL.

Bryum heteromallum. Linn. *Dicranum heteromallum.* Hedwig. Hedge banks, heaths, and roots of trees. On Snowdon. DILL. [Cwm Idwell. Mr. GRIFFITH. Further Plantation, Edgbaston.] A. Mar.—May.

Var. 2. Leaves shorter, lower ones pointing 2 ways.

Dill. 47. 38.

Leaves yellow green, suddenly narrowing from the base, upwards 1-rowed, downwards 2-rowed, curled when dry. *Veil*

very slender, pale. DILL. *Leaves* broad and sheathing at the base, then bristle-shaped. *Fruit-stalks* shorter than the shoot. *Capsules* egg-oblong, equal in length to twice its breadth.—Specimen from Mr. Griffith, who gathered it on the rocks of Clogwy Dū y r Arddu p. Snowdon.

MN. Capsule egg-oblong: lid taper-pointed, bent; shoots glau'cum.
branched: leaves egg-shaped, acute, tiled.

Dill. 46. 20–*Vaill.* 26. 13–*H. ox.* XV. 6. *row the last,* 22.

Stem with the appearance of Sphagnum *palustre*. *Leaves* whitish. *Lid* awl-shaped. LINN. *Leaves* 3 lines or more in length, very entire. *Lid* awl-shaped, very sharp pointed. *Mouth* fringed. POLLICH. Whole plant brittle, greyish when growing, or pale glaucous green; whitish when dry. *Veil* slender, white. DILL. One to 3 inches high; branches thick. *Fruit-stalk* 1 inch, but only ½ inch higher than the shoots.

Br. glaucum. Linn. *Dicranum.* Hedwig. Mountainous heaths. [Near the copper-works at Llanberris; but very rarely bears fruit. Mr. GRIFFITH.] P. Aug.—Nov.

MN. Capsules egg-oblong, small: lid taper-pointed, bent: pellu'cens.
shoot hairy: leaves spear-shaped, reflected, acute.

Hedw. theor. 8. 1 *to* 4–*Dill.* 46. 23, 24–*Pluk.* 44. 7–*Pluk.* 49. 1, *several shoots rising from the top of that of last year.*

Shoots from 1 to 3 inches, with rust-coloured hair-like fibres on the lower part. *Leaves* slender, keeled, crooked, pellucid, sometimes wrinkled. *Fruit-stalks* sometimes in pairs; terminating. *Capsules* brown when dry. DILL.

Br. pellucidum. Linn. Marshy and shady places. Near North Bierly, not far from Bradford, Yorkshire, and on the sides of lakes on Glyder and Snowdon mountains. P. June—Sept.

MN. Capsules egg-oblong; lids conical: shoots branched, palus'tre.
forked: leaves awl-shaped, acute.

E. bot. 391–*Dill.* 31. 3–*Vaill.* 24. 1–*H. ox.* XV. 6. *row* 3. 9 –*Schmid.* 56. 2.

Capsules crooked after shedding their seeds. *Fruit-stalks* slightly waved. Mr. GRIFFITH. *Fruit-stalks* yellow. REYG. often 2 inches long, RELH. from the forks of the stem. NECK. crowded. *Stems* upright, 2 to 5 inches high; mostly 2, sometimes with 3 divisions. *Leaves* slender, soft, pellucid, keeled, yellow green, yellow when dry. DILL. *Stems* 2 or 3 inches high, branching towards the top into 2, 3, or 4 shoots. *Leaves*, lower ones downy. *Summit-leaves* flat, large, forming stars, in which are the barren flowers. *Fruit-stalks* from the tops of the

last year's shoots, which now likewise support new shoots. *Capsules* leaning.

Turf bogs and wet heaths, marshes and moors. [Near Bungay, Suffolk. Mr. Stone.] P. June, July.

Var. 2. Stem branched, upright. Fruit-stalks from the bosom of the leaves. Huds.

Dill. 31. 4.

Stem sometimes simple. Dill. 236. *Fertile flowers* not discovered. Dill. *in R. Syn.* 78. *n.* 3.—Smaller than the preceding. *Fruit-stalks* axillary, numerous, not terminating in capsules, but in small globular heads containing a powder. Seems to be the male plant.

M. *ramosum.* Huds. ed. i. 403, and Gmelin *Syst. veg.*

purpu'reum. Mn. Capsules nearly cylindrical: fruit-stalks axillary: shoots branched: leaves oblong, acute, keeled.

Dill. 49. 51–*H. ox.* xv. 6. *row* 4. 4, *some of the fruit-stalks terminating.*

Grows in very dense patches. *Stem* upright, mostly forked, and these shoots sometimes dividing again. *Leaves* spear-awl-shaped, in some shoots forming terminating stars. *Fruit-stalks* an inch high, at first upright, afterwards a little leaning. *Lid* conical, pointed, scarlet. *Veil* upright, afterwards oblique. Weis.

Bryum purpureum. Huds. and Lightf. *Dicranum purpureum.* Hedwig. Walls, heaths, rocks, and gravelly banks and pastures. April.

Var. 2. Leaves less rigid; spear-shaped.

Dill. 49. 52.

Leaves ending in hair-like points. *Capsule* finely pointed. Dill.

On Emott Moor on the borders of Lancashire and Shobdon Marsh, Herefordshire. [Near Llyn Aled Lake. Mr. Griffith.] June.

(4) *Capsules drooping.*

arcua'tum. Mn. Capsules globular, toothed: shoots branched: leaves oblong-spear-shaped, taper-pointed, scored. Dicks.

Dicks. h. s. and fasc. iii. 7. 3–*Dill.* 39. 36.

Leaves upright but spreading; serrulated. *Male* flower terminating, star-like. *Fruit-stalk* terminating, crooked, surrounded by young shoots. *Caps.* mouth narrow. *Fringe,* teeth short, upright, acute, red. *Lid* minute, scarcely beaked. Dicks. The fuscous woolly matter which surrounds the shoot is a con-

stant attandant. *Fruit-stalks* at the base of the branches, golden red, hardly ½ inch long, crooked. *Capsule* golden yellow, globular. Mr. BRADBURY. *Leaves* serrulated chiefly towards the end.

Hypnum chrysocomum. Bot. arr. *ed.* ii. In bogs in the northern parts of Yorkshire, and in moist places on Glyder Mountain. DILL. Boggy places in Scotland. DICKS. [On bogs with the Mnium *palustre* in Greenfield, Saddleworth, Yorkshire, and Stayley, Cheshire. Mr. BRADBURY. By the side of Avon las, near Pistyll, in Llanberris parish. Mr. GRIFFITH. Foot of Pentland hills, near Edinburgh. Mr. BROWN.] Nov.

MN. Capsule spear-shaped: lid blunt: shoots somewhat nu'tans, branched; leaves egg-shaped, acute.

Hedw. stirp. iii. 8–*Dill.* 51. 74.

Shorter than the preceding. *Capsules* pear-shaped, *i. e.* largest at the end. *Leaves* deeply keeled, closing together when dry, very much crowded and compressed. Stem and leaves at the bottom black. *Lids* very short and blunt. DILL.

Mn. turbinatum. Hedwig. *Mnium triquetrum* γ Huds. 491. *Br. ventricosum* γ Bot. arr. *ed.* ii. Marshy places. On Shooter's Hill near Eltham, and in Wales. Spring and summer. DILL.

MN. Capsules pear-shaped, lids flat: shoots rarely branched: leaves oblong, taper-pointed. hygrome'tricum.

E. bot. 342–*Dill.* 52. 75–*Vaill.* 26. 16–*H. ox.* xv. 7. 17–*Happ.* i. *Mnium.* 2–*Fuchs.* 629. 2–*Trag.* 528. 2–*J. B.* iii. 760. 2–*Lon.* i. 222. 4–*Dod.* 475. 1–*Ger. em.* 1559. 4, *the middle one of the* 3 *lower figures.*–*Park.* 1052, *left hand upper fig.*–*Fl. dan.* 648–*Ger.* 1371. 4.

Grows in large patches. *Stem* 1 to 2 inches high, but mostly buried in the earth. *Fruit-stalk* a full inch long. *Caps.* pear-shaped, golden yellow. WEIS. It may be found in December, very small and close to the ground, the leaves very fine, from the midst of which projects the young fruit-stalk like the point of a pin. In January the 4-sided veil appears, of a straw-colour; in February and March the capsules are found, which ripen in April and May. *Leaves* tender, pellucid, veinless. DILL.

Bryum hygrometricum. Huds. E. bot. *Koelreuteria hygrometica.* Hedwig. Common in woods, heaths, garden walks, walls, old trees, decayed wood, and where coals or cinders have lain.

A. Mar.—May.

If the fruit-stalk be moistened at the bottom, the head makes 3 or 4 revolutions: if the upper part is moistened, it turns the contrary way. LINN.

cuspida'tum. Mn. Capsules egg-shaped: leaves egg-shaped, pointed, serrated.

Dill. 53. 79–*Vaill.* 26. 18–*Happ.* ii. 6.

Shoots $\frac{1}{2}$ inch high; lower leaves smaller, blunter, alternate, upper leaves larger, more acute, pellucid, smooth, sharply serrated and pointed at the end by an extension of the mid-rib. *Fruit-stalk* $\frac{1}{2}$ to 1 inch long, when old saffron-coloured, issuing out of a purple tubercle encompassed by slender leaves. *Capsules* egg-shaped. Dill. *Fruit-stalk* either solitary or several together. Wildenow.

Br. serpyllifolium cuspidatum. Huds. and Bot. arr. *ed.* ii. Woods, moist heaths, shady places, and in bogs on heaths and meadows. P. April.

hor'num. Mn. Capsules egg-shaped: leaves spear-shaped, acute, serrated.

Dill. 51. 71–*Mich.* 59. 2–*Curt.*–*Vaill.* 24. 4 *and* 5–*H. ox.* xv. 6. *row the last,* 3 *and* 4, *as it sometimes appears before it produces capsules.*

From $\frac{1}{2}$ to 1 inch high, but larger in moister situations, midrib red, stiff. *Leaves* green, pellucid, finely crenated. *Fruit-stalk* saffron red, shining, 1 to 2 inches long, bent like a swan's neck. *Caps.* oblong, nodding, swollen, dark green. *Lid* brown. *Leaves* at the base of the fruit-stalk slender. Dill. Male shoot simple; female branched at the base. *Leaves* sharply serrated and ending in a sharp point.

Br. hornum. Huds. Curt. Woods, moist shady and boggy places. P. Feb.—May.

capilla're. Mn. Capsules oblong-egg-shaped: fruit-stalks from near the root: leaves egg-shaped, keeled, bristle-pointed.

Dill. 50. 67–*Fl. dan.* 1122. 2–*H. ox.* xv. 6. *row* 5. 19–*Vaill.* 24. 6.

Shoots, at the ends of some a very small brown star. Very nearly allied to *Bryum cæspiticium.* Linn. *Leaves* short, broad, ending in a short hair. *Fruit-stalk* 1 inch long, issuing from the last year's shoots. *Capsules* swollen, reflected. *Lid* hemispherical, shining. Ray. *Capsules* less pendent when ripe. Dill. From $\frac{1}{2}$ to 1 inch high. Its sitting shoots, and expanding upper leaves, distinguish it from the B. *cæspiticium,* though it should not be in fruit. Neck. Differs from Bryum *cæspiticium* in its greater size, the lids of its capsules being sharp pointed, and its leaves not shining. Weis.

Bryum capillare. Linn. Huds. Mud walls, heaths, roofs. P. Feb. March.

Mn. Capsules oblong-egg-shaped: fruit-stalks from near the root: leaves pellucid, egg-shaped, taper-pointed. anno'tinum

Dill. 50. 68.

Leaves spear-shaped, pointed, not twisting when dry, turning brown when soaked in water. *Fruit-stalk* 1 inch long. *Capsule* oblong, pendent. *Lid* pointed; blunter when old. Dill. *Stem* ½ to 1 inch high, simple, or branched almost from the bottom. *Leaves* very entire, those on the stellated shoots broader.

Bryum annotinum. Huds. Woods and moist shady places.

[Crib y Ddeseil. Mr. Griffith.]

P. March, April. Huds.—Summer. Dill.

Mn. Capsules oblong-egg-shaped: stem unbranched: fruit-stalks often several together: leaves inversely egg-shaped, very entire, blunt, dotted. puncta'tum

Dill. 53. 81–*Happ.* ii. 4–*Vaill.* 26. 5–*Pluk.* 45. 7–*H. ox.* xv. 6. 39, *and* 40.

It varies in the fruit-stalks being solitary or incorporated, and also in the fertile shoots being upright, and the barren shoots creeping. Willdenow. Grows in large patches. *Stems* simple. *Leaves* with a scarlet rib, cartilaginous and purple at the edges. *Fruit-stalks* terminating, generally single, sometimes 3 or 4 together; one to two inches high; thicker downwards. *Capsules* nodding, egg-shaped. *Seeds* greenish. *Shoots* without capsules, ending in roses. Weis. *Leaves* pellucid, smooth, pale green. *Fruit-stalks* one to three on a plant. Dill.

Bryum serpyllifolium punctatum. Huds. *Mn. serpyllifolium.*

Var. 2. *punctatum.* Bot. arr. *ed.* ii. Leaves longer, more pellucid.

Dill. 53. 80.

Leaves longer and blunter than β of Linnæus. *Capsules* not so pendulous. *Lid* spit-pointed. *Fruit-stalks* three to five on a plant. Dill.

In bogs in the West Riding of Yorkshire.

Capsules half ripe in spring. Dill.

Mn. Capsules oblong-egg-shaped: fruit-stalks several together: leaves oblong, waved, serrulated. undula'tum.

Dill. 52. 76–*Vaill.* 24. 3–*Mich.* 59. 5–*Tourn.* 326. *E.*–*Pet. gaz.* 95. 16–*H. ox.* xv. 6, *row the last,* 1–*Neck meth. f.* 6. *at p.* 273, *a star-like head.*

Root strong, creeping. *Shoots* 3 or 4, to 5 or 6 inches long, branched or unbranched. *Leaves* thin, pellucid, strap-spear-shaped, waved and serrated. *Caps.* pendent; lid blunt. *Veil*

straight, pointed. DILL. *Barren* flowers surrounded by strap-shaped leafits, in the centre of shoots ending in roses. WEIS. Barren and fertile shoots from the same roots. *Leaves* strap-shaped; mid-rib large.

Bryum serpyllifolium undulatum. Huds. *Mn. serpyllifolium undulatum.* Bot. arr. *ed.* ii. Moist shady woods about the roots of trees and hedges. P. April.

proliferum. MN. Capsules oblong-egg-shaped: shoots proliferous: leaves spear-shaped, pointed, forming terminating roses.

Dill. 52. 77–*Buxb.* 11. 1. 3.

Stems straight, naked. *Leaves* terminating, large, shining, pellucid, disposed in a circle, widening upwards, ending in a point, scarce sensibly serrated. *Capsules* on a different plant, rarely appearing, pendent; lid reddish, blunt. *Fruit-stalk* 1 inch long, thick. DILL. Very elegant in form; shrub-like. *Stem* naked at bottom, foliage from one centre at the top. *Leaves* from three to six lines long, and two broad. Other shoots often rise from this foliage. Some of these are barren roses, but others send out fruit-stalks, one or two inches long, bearing pale orange capsules. *Veils* not observed. WEIS.

Bryum serpyllifolium proliferum. HUDS. and Bot. arr. *ed.* ii. Wet places in woods and heaths near Bishop's Castle. DILL.—[Bungay, Suffolk. Mr. STONE.] Winter.

Var. 2. Capsules and fruit-stalks very long.

Dill. 52. 78.

Fruit-stalks reddish. *Capsules* pendent. *Lid* blunt. *Leaves* pellucid, ending in hairs, but not grey ones. *Root* woolly, ochrey. DILL.

Wet places in woods and heaths.

cru'dum. MN. Capsules oblong-egg-shaped: shoot unbranched: leaves spear-shaped, acute.

Hedw. stirp. i. 37–*Dill.* 51. 70–*Vaill.* 26. 12.

Leaves green, almost silky. *Fruit-stalks* long, red. LINN. Half an inch high; not branched. *Leaves*, upper ones thrice as long as the lower, crowded, upright but open. *Capsules* upright, then pendent, and lastly upright again. *Veil* turning up when the capsule hangs down. *Lid* hemispherical, beak short, stellated plants not so tall. A powdery brown substance in the centre of the star. LEERS. *Fertile stem* ½ an inch; *Barren stem* an inch high, or more. *Leaves*, the upper ones a little toothed towards the ends. *Capsule* bent horizontally. *Mouth*, outer fringe of 16 teeth. HEDWIG. *Fruit-stalks* from the ends of the young shoots; pale red. DILL. The whole plant has a silky

gloss. Lower leaves broader and shorter than those above; a few of the uppermost sometimes very slender pointed.

Bryum crudum. Linn. Huds. Fens in Cambridgeshire. DILL. Woods about Rydall, Westmoreland. HUDS. [Crib y Ddeseil, Caernarvonshire, Cador Idris, Merionethshire. Mr. GRIFFITH.]

P. March—June.

MN. Capsules oblong-egg-shaped: shoots short, but branched: leaves spear-shaped, hair-pointed. cæspiti'cium.

Curt. 166–*Dill.* 50. 66–*H. ox.* xv. 6. *row* 5. 15–*Vaill.* 29. 7.

Fruit-stalks red at bottom, yellow green at top. REYG. Grows in broad dense patches. Only a few lines high; branched at the top, covered with a brown knap at bottom. *Leaves* very small, crowded, shining. *Fruit-stalks* an inch (or 2) high, issuing from the roses of last year's shoots, surrounded at bottom with a leafy sheath or fence. *Capsule* at first upright; slender egg-shaped. *Lid* red, shining, nipple-shaped. *Mouth* slightly fringed. *Veil* brown, changing to tawny red. WEIS. and DILL. *Leaves* mid-ribbed. *Fruit-stalks* from an oblong bulb, invested with hair-like fibres. Outer coat of the *capsule* with 16 teeth.

Bryum cæspiticium. Huds. Curt. Old walls, stones, roofs, grass, gravel, banks, and hillocks. P. Feb.—April.

MN. Capsules oblong-egg-shaped: shoots branched: leaves pseudo-tri'-egg or spear-awl-shaped, bordered, keeled, pointing in 3 directions. quetrum.

Hedw. stirp. iii. 7–*Dill.* 51. 72–*Vaill.* 24. 2 *and* 2–*H. ox.* xv. 6, *row* 5. 20.

Capsule, the neck downwards becomes gradually narrower, DICKS. *Stems* simple or branched; branches sometimes very slender, at others thicker and shorter; thickest where the fruit-stalks put forth, the leaves there expanding in the form of stars. *Fruit-stalks* near 2 inches long, purple. *Capsules* bent downwards, bellying, green. *Lid* small, shining, white. *Veil* short, brown, red. DILL.

Bryum ventricosum. Dicks. and Gmelin. *Bryum triquetrum*. Huds. *Mnium triquetrum* according to Lightf. 715, Huds. and Relh. n. 786, but in the specimens of *Mnium triquetrum* in the Linnæan herbarium and Ehrhart's phytophyllacium the capsules are upright slanting. DICKS.

Leaves pointing 3 ways; not pressed to when dry. Mr. GRIFFITH; who limits the reference to Dill. to the figures marked D. E. *Leaves* mid-ribbed, bordered, bristle-pointed; upper ones spear-egg-shaped, lower ones egg-shaped.

Turf bogs and marshy places. [Turf pits, Ellingham Fens, Norfolk. Mr. STONE. On mud or gravel by the sides of rivulets

and springs, in the ascent to Snowdon and Glyder. Mr. GRIFFITH.] March—May.

Var. 2. Larger in all its parts.

Dill. 51. 73–*Fl. dan.* 1122. 1.

Leaves spear-shaped, alternate. *Fruit-stalks* red, sometimes branched. *Leaves* pellucid, green, shining. When about to flower it sends forth some reddish shoots, with finer leaves encompassed by others of a paler green. Flowers in the summer. DILL. *Leaves* almost hair-pointed.

Bryum triquetrum. ε. Huds. 490. *Br. ventricosum.* β Bot. arr. *ed.* ii. In marshy places. The *red* kind is found in the mountain torrents of Snowdon, and the *green* in high boggy heaths about London and Oxford. DILL. [Near Celin house, 2 miles from Holywell. Mr. GRIFFITH.] Summer.

BRY'UM. *Fruit-stalk* terminating, issuing out of a tubercle: *capsule* with a veil.

Male, a *bud* either on the same or on a different plant; often axillary.

SUBDIVISIONS OF THE BRYUMS.

A. Capsules sitting, or nearly so.

B. Capsules on fruit-stalks, UPRIGHT.

1. *Stemless.*
2. *Stem very short, rarely branched.*
3. *Stems trailing.*
4. *Stems upright.*
   - *a.* Capsules roundish.
   - *b.* Capsules egg-shaped.
   - *c.* Capsules oblong.

C. Capsules on fruit-stalks, LEANING.

1. Stem none, or very short and unbranched.
2. Stems upright.

D. Capsules on fruit-stalks, DROOPING.

1. Stem none, or very short and unbranched.
2. Stems upright.

A. Capsules sitting, or nearly so.

apocar'pum. BR. Capsules sitting, terminating; beak bent: veil very small.

Schmid. 57. 1–*Vaill.* 27. 15–*Hedw. stirp.* i. 39–*Dill.* 32. 4–*Fl. dan.* 480–*Happ.* iii. 2.

Shoots one to two inches high; somewhat branched. *Leaves* at the ends of the shoots and branches, paler, longer, hairy at the end; from amongst these rise up *fruit-stalks*, very short, purple, with a yellow tubercle. *Capsules* oblong, smooth, green, changing to a yellow. *Mouth* purple, open, elegantly fringed. *Lid* scarlet. *Veil* pale yellow, deciduous. The fruit-stalks are so enveloped by the leaves at the extremity of the shoots, that neither they nor the capsules can be distinctly seen, but the scarlet lid strikes the eye. Weis.

Grimmia apocarpa. Hedwig. Rocks, stones, and trees. [Walls and roofs of houses, in Bungay, Suffolk. Mr. Stone.]

Nov.—April.

Var. 2. Shoots longer and more branched, leafits ending in hairs.

Hedw. stirp. i. 40–*Dill.* 32. 5, *B dry, A moistened–Vaill.* 27. 18.

In spreading tufts like the preceding, but the stems are longer, more branched, more leafy. *Leaves* broader, terminating hairs longer; dilute green in winter, hoary in spring. The ends of the branches often hooked, which never happens in the preceding variety. *Capsules* inclosed in leafy scales, green; the young ones at the ends, the old ones at the sides of the branches. Dill.

Hedwigia ciliata. Hedw. Rocks and trees. West Riding of Yorkshire. Grey Weathers near Marlborough. Hills about Bishop's Castle. Dill. [King's Park, Edinburgh. Mr. Brown. Upon stones, on hills about Stayley Bridge, near Manchester. April. Mr. Bradbury.] Nov.—Jan.

Br. Capsules sitting; beak straight: leaves straight, keeled. ses'sile.

Dill. 55. 10.

Grows in tufts. Stem about an inch high, somewhat branched. Leaves numerous, straight, keeled, pellucid when wet, opake and darker green when dry. *Fruit-stalks* very short, thick at the bottom. *Veil* brown, hairy, striated. Dill.

Bryum striatum. var. γ, Bot. arr. *ed.* ii. Rocks near Bangor. Dill. [On stones on the side of a river which are washed by the water in high floods. Mr. Griffith.] Autumn.

Br. Capsules sitting; axillary: veils hairy, conical. tecto'rum.

Hedw. stirp. 11. 37–*Dill.* 55. 9–*Vaill.* 27. 10–*H. ox.* xv. 6. *row the last*, 13.

Plant smaller than the *Br. striatum*, leaves smaller, darker green: veil paler and more distinctly toothed at the base. Dill.

Differs also from it in wanting the inner fringe, and having the edge of the veil scolloped. HEDWIG.

Orthotrichum anomalum. Hedw. On stones, walls, and the ground. Feb.—April. DILL.

Var. 2. *Leaves* mid-ribbed, hair-pointed. *Capsules* on short fruit-stalks, terminating, with 16 slender expanding teeth. *Veil* hairless, ribbed. On the trunk of a tree in the poultry yard, at Edgbaston. April.

stria'tum. BR. Capsules oblong, sitting, axillary or terminating: veils hairy: leaves spear-shaped, acute.

Hedw. stirp. ii. 36–*Neck. meth.* 1. 2, *at p.* 273, *a capsule magnified.*–*Dill.* 55. 8–*Fl. dan.* 537. 3–*Vaill.* 25. 5 *and* 6.

OBS. Nearly allied to the POLYTRICHUMS, but wants the fleshy receptacle below the capsule. LINN.

Shoots 1 inch high, branched. *Capsules* lateral. *Mouth* nearly smooth, without a ring. NECK. Branched; 2 or 3 inches high. *Leaves* as if gnawed at the ends. *Florets* of both sorts on the same or on distinct plants. *Fruit-stalk*, very short, sheathed at the base. *Capsule* egg-shaped. *Lid* small, beak blunt. *Fringe* double, 16 teeth in each. Is found both in flower and in fruit almost all the year. HEDWIG.

Polytr. striatum. Huds. *Orthotrich. striatum*. HEDW. In woods on trees. The veils appear in winter, and the capsules in Feb. March, and April. DILL. P.

B. Capsules on fruit-stalks, UPRIGHT.

(1) *Stemless.*

cuneifo'lium. BR. Capsules cylindrical, toothed: leaves wedge egg-shaped, pellucid, reticulated. DICKS.

Dill. 45. 15–*Buxb.* i. 64.

Leaves shorter, broader, softer than in the Br. *murale*, pellucid, green, not hoary with hairs. Grows much crowded together, but not in a circular form. DILL.

Br. murale ε, Huds. and Bot. arr. *ed.* ii. On banks of earth near Streatham, Surry, and at Oxford. Winter. DILL.

mura'le. BR. Capsules oblong: lids conical, acute: shoots very short, subdivided: leaves mid-ribbed, egg-shaped, acute, hair-pointed.

Dill. 45. 14–*Vaill.* 24. 15, *in a tuft*–*Buxb.* i. 64. 4–*Mich.* 59. 7.

Sometimes grows in tufts, but often spreads in shady places.

Leaves opake, approaching, rigid, fine green when wet, dullgreen when dry. DILL.

The lower leaves generally lose their terminating hairs. When the lid is carefully removed from the Capsule, the mouth of the latter is seen adorned with a conical pencil of rich saffron coloured hairs twisted spirally and projecting so as to fill up the lid.

Walls, roofs, tiles, stones, rocks and sandy places, everywhere. P. Nov.—March.

Br. Capsules inversely egg-shaped, lopped: lid convex: leaves spear-egg-shaped, taper-pointed. DICKS. obtu'sum.

Dicks. 4. 7. *a. b.*

Fringe none. *Veil* bell-awl-shaped. *Leaves*, under the microscope, reticulated, finely toothed. Differs from *B. truncatulum* in the beaked lid, and its capsule being longer, &c. DICKS.

Stones and rocks on Ben Crechan, Scotland.

Br. Capsules egg-shaped: leaves egg-shaped, concave, hair-pointed. DICKS. ii. 4. ova'tum.

Dicks. h. s.–Hedw. stirp. i. 6–*H. ox.* xv. 7. 18.

Very minute, unbranched, with scarcely any stem. *Flowers* terminating. *Fruit-stalk* upright, not longer than the capsule. *Veil* reddish brown. *Lid* conical, beak oblique. Very common on mud walls, spreading in broad and dense patches; seldom on the ground.

Gymnostomum ovatum. Hedwig. Pastures. Mud walls. April, May.

Br. Capsules oblong, fringed: leaves concave, egg-awl-shaped. DICKS. ii. 6. pusil'lum.

Hedw. stirp. i. 28.

Stem unbranched, upright, very minute, not more than 2 or 3 lines high. *Leaves* concave and egg-shaped at the base, but very long and slender upwards. Barren flowers in the bosom of the leaves. *Fruit-stalks* on the same plant, terminating, thrice as long as the stem, nearly upright. *Fringe* single, of 16 teeth, deeply divided, red.

Trichostomum pusillum. Hedwig. In sandy places. A. Feb. March.

Br. Capsules pear-shaped: leaves flat, oblong, acute. pyrifor'me.

Dicks. h. s.–E. bot. 413–*Dill.* 44. 6–*Fl. dan.* 637. 1–*Vaill.* 29. 3–*H. ox.* xv. 7. *row* 2. 16. *p.* 631–*Buxb.* i. 64. 1.

Fruit-stalks $\frac{1}{2}$ to 1 inch long. RELH. n. 1015. *Leaves* 1 line

broad, $1\frac{1}{2}$ long. *Involucrum* none. *Fruit-stalk* about 3 lines long. *Capsule*, mouth without fringe. POLLICH. *Veil* before the capsule swells, 4-sided; afterwards it tears into 2, 3, or 4 segments. *Leaves* tender, pellucid, pale green. *Capsules* large for the size of the plant, which rises but little above the ground. DILL.

Heaths, hedges and ditch banks. [Near Bungay, Suffolk. Mr. STONE.] A. Feb. March, and April.

stella'tum. BR. Capsules pointed, bearded: leaves egg-spear-shaped, pointed, somewhat rolled in. DICKS. ii. 6.

Dill. 49. 56.

On ditch banks and brinks of rivulets, Scotland.

calca'reum. BR. Capsules inversely conical, toothed: leaves upright, cylindrical, bluntish. DICKS.

Dicks. h. s.–E. bot. 191–*Dicks.* 4. 3.

A dwarfish plant, smaller than B. *paludosum*, but the capsules sufficiently large and conspicuous. *Lid* conical, with a beak somewhat slanting. DICKS. *Caps.* with 16 teeth; not with 12 as in Mr. Dickson's figure.

On limestone rocks near Newmarket Heath.

cervicula'tum. BR. Capsules egg-shaped, unequal, toothed: leaves very slender.

Hedw. stirp. iii. 37. A.

Not branched; upright. Lower leaves very minute, spear-shaped; upper oblong-spear-shaped, concave, with a very long tapering point, expanding when moist, closing but not curling when dry; pale green. *Capsules* egg-shaped but less convex on one side, which gives it an appearance of leaning. *Lid* fine red, slanting, taper-pointed.

Dicranum cerviculatum. Hedwig. On Hampstead Heath near London, in dry peaty places. DICKSON.

paludo'sum. BR. Capsule very blunt, mouth wide: leaves bristle-shaped.

Dill. 49. 53.

Differs from B. *viridulum* in its brown capsules, and the leaves not curling when dry. LINN. Extremely small, only observable from its growing in a quantity together. *Leaves* minute, hair-like, but expanding. *Fruit-stalk* terminating, 2 or 3 lines long. *Capsules* egg-shaped. *Mouth* wide, minutely fringed. *Veil* slender, upright. Differs from the B. *virens* in the darker green of its leaves, their being slenderer, not curling when dry, and in having smaller capsules. WEIS. *Leaves* very slender,

scarce sensibly broad, soft, dull green. *Capsules, lid* deciduous, leaving a large open for the size of the capsule. DILL. Differs from Br. *viridulum* in the leaves, which though bristle-shaped are broad at the base, the mid-rib only visible in the broader part; fruit-stalk twisting when moistened; capsule egg-shaped, with an orifice equal to its greatest diameter. Mr. GRIFFITH.

In sandy marshes and turfy ground in Yorkshire. RICHARDSON *in Dill.* 387. Moist rocks, and sometimes decayed wood in damp shady places. LIGHTF. [On stones and roots of trees in damp situations in Garn Dingle, Denbighshire, particularly on sand stones by the petrifying spring. Mr. GRIFFITH.]

A. March—May.

Br. Stemless; capsules nearly upright: fruit-stalks very long: leaves like bristles. Cel'sii.

Dill. 49. 54.

Sent from Sweden to Dillenius, but now found in Scotland by Mr. DICKSON. *Shoot* very minute. *Fruit-stalk* $\frac{3}{4}$ of an inch high. *Lid* pointed.

On rocks on the Highland mountains. DICKS.

Br. Capsules oblong: shoot very short: edges of the leaves turned in. ri'gidum.

Hedw. stirp. i. 25–*E. bot.* 180–*Dill.* 49. 55.

Stems very short. *Leaves* very entire, bluntish, flat above, convex underneath, naked. *Fruit-stalk* terminating solitary, upright, $\frac{1}{2}$ inch long, purple. *Veil* conical, pale. *Capsules* fringed, smooth. *Lid* taper-pointed, purple at the base, half as long as the capsule. HUDS. *Fertile* plant always taller and slenderer than the *barren* plant, but both of them short and thick. *Fringe* red, composed of 32 long slender filaments, spirally twisted together when moist. HEDWIG. *Leaves* stiff, like those of heath. DILL.

Barbula rigida. Hedwig. Moist rocks near Wigmore, Herefordshire. BROWN *in Dill.* On Ingleborough, Yorkshire. HUDS. [Thorpe, near Norwich. Dr. J. E. SMITH.]

P. Nov.—July.

Br. Capsules oblong: lid taper-pointed: veil reaching half way round: leaves strap-spear-shaped. paucifo'lium.

Dicks. h. s.–Dicks. 1. 5.

Whole *plant* scarcely more than the 8th of an inch high, the smallest of this Genus which I have hitherto seen. *Leaves* 3 or 4, when viewed through a magnifying glass strap-spear-shaped, ribbed underneath. *Fruit-stalk* yellowish, sometimes 2 from the same point. *Capsule* upright, oblong, somewhat cylindrical,

brownish when ripe, with a swollen red ring. *Lid* taper-pointed, somewhat crooked, nearly as long as the capsule. *Veil* oblique, minute. *Fringe* toothed; teeth numerous, bent in. Differs from B. *paludasum* in the leaves not being bristle-shaped, and in the shape of the capsule. Dicks.

Weissia controversa. Hedwig. *Br. viridulum*. Dicks. fasc. i. p. 3; who believes it, on the authority of the Linn. herbarium to be the Br. viridulum of Linnæus, whose synonym. he thinks are erroneous, and have misled our botanists. I am far from doubting the well known accuracy of Mr. Dickson, but it is as easy to suppose a mistake existing in the Herbarium as in the Sp. Pl. and I the rather believe this to be the case, because the specific char. of the Br. viridulum with "tiled leaves," does not at all apply to Mr. Dickson's plant with only 3 or 4 leaves placed regularly at the top of the root, though truly descriptive of the plant Linn. refers to in his synonyms. Under the existing circumstances it seems necessary to give it a new trivial name, the Br. *Dicksoni*, and I expect Br. *viridulum* being allotted to other species. Fortunately the circumstance of its having only 4 or 5 leaves, allows us to adopt a name unobjectionable, and expressive. Boggy ground, on Enfield Chace. June.

B. Capsules on fruit-stalks, UPRIGHT.

(2) *Stem very short; rarely branched.*

Hei'mii. Br. Capsules oblong: shoot upright: leaves spatula-shaped, taper-pointed, toothed upwards.

Hedw. stirp. i. 30.

Stem near $\frac{1}{2}$ inch high, unbranched, upright. *Fruit-stalks* terminating, near an inch high. *Veil* opening at the side. *Caps.* long-egg-shaped. *Lid*, beak bent to one side. *Fringe* none.

Gymnostomum Heimii. Hedwig. Sandy places; in northern exposures. Feb.—June. P.

Forste'ri. Br. Capsules toothed: fruit-stalks slanting: shoots nearly stemless: leaves egg-shaped. Dicks.

Dicks. iii. 7. 8.

Grows in dense patches. *Leaves* crowded, keeled, finely reticulated, dark green, the upper ones closing. *Capsule* oblong-egg-shaped. *Fringe* toothed. *Beak* slanting. *Veil* awl-shaped. Dicks. Found by Mr. Forster, junior, on dead trunks of trees at Walthamstow.

fascicula're, Br. Capsules roundish pear-shaped, mouth naked: shoots leafless below: leaves in bundles: egg-spear-shaped, taper-pointed. Dicks.

Dicks. h. s. and fasc. iii. 7. 5.

Roots strong, brown. *Shoots* nearly upright. *Leaves* toothed, twisted at the end; with a midrib. *Lid* very blunt. *Veil* bellying, contracted at the base. DICKS.

Barren sandy places. P.

BR. Capsules egg-cylindrical, mouth with a membranaceous fringe: shoots nearly stemless: leaves waved, spear-shaped, serrated. DICKS. flexifo'lium.

Dicks. fasc. iii. 7. 9.

From 2 to 4 lines high. *Leaves* crowded, upright, but expanding, acute, keeled, serrated upwards, yellow green, twisted when dry. *Fruit-stalk* terminating, near $\frac{1}{2}$ inch high, pale, yellow. *Capsule* cylindrical, but a little swollen at the base. *Lid* conical, blunt, rather thicker at the top. *Veil* awl-shaped.

On barren sloping ground near Croydon. DICKSON.

BR. Capsules cylindrical: involucrum leaves blunt, rolled up so as to form a cylinder: leaves spear-shaped. convolu'tum,

Dicks. h. s.–Hedw. stirp. i. 32–*Dill.* 48. 44–*Schmid.* 57. 5.

Grows in dense tufts, $\frac{1}{2}$ an inch or more in height; branches issuing out of the thickened tops of the old shoots, which are stellated at the ends. *Leaves* loosely disposed, ending in hairs. *Fruit-stalks* from the last year's shoots, 1 inch long, encompassed at the base by an involucrum of awl-shaped hairy leaves. WEIS. Sometimes with forked branches. *Leaves* very slender, hardly $\frac{1}{3}$ of a line broad at the base, very entire. *Involucrum* terminating, embracing closely the base of the fruit-stalk. *Capsule* cylindrical, a line long, hardly $\frac{1}{4}$ as broad. *Mouth* without a ring; fringe red. *Lid* slender, upright, awl-shaped. *Veil* pointed, smooth, thread-shaped, reaching but half way. POLLICH. Inner *involucrum-leaves* heart-shaped, blunt.

B. setaceum. Huds. 481. Lightf. 729.—(*Mnium setaceum* of Linn. is a different species which has rigid bristle-shaped leaves.)

DICKS. *Barbula convoluta.* Hedwig; in the plate named *setacea.*

Heaths, hedge banks, and walls, very common. A. March.

BR. Capsules roundish, somewhat bent, toothed and fringed: leaves spear-shaped, acute, expanding. DICKS. ii. 8. dealba'tum,

Dicks. 5. 3. *a. b. c.*

Habit that of Br. *trichodes,* from which it differs as follows. *Leaves* spear-shaped, mostly pale, under the microscope reticulated, pellucid, finely but obscurely serrated at the end. *Lid* beak short. DICKS.

Mountains in Scotland; on Ben Lawers.

extincto'rium Br. Capsules cylindrical, entirely covered by the bell-shaped veils: shoots simple: leaves spear-shaped.

Dicks. h. s.–E. bot. 558–*Hedw. stirp.* i. 18–*Fl. dan.* 1001–*Dill.* 45. 8–*Vaill.* 26. 1.

Fruit-stalks terminating. *Capsule*, mouth not fringed. Neck. Grows thick together in patches, $\frac{1}{2}$ inch to 1 inch high; sometimes a little branched towards the top; very leafy, ending in roses. *Fruit-stalks* not $\frac{1}{2}$ inch long, upright. *Capsules* cylindrical. *Lid* sharp-pointed. The veil covering the whole capsule and hanging down below it, distinguishes this from every other Moss. Dill.

Leersia vulgaris. Hedwig. Grassy places in a sandy soil, dry heaths, and rocks. [Castle walls, Bungay, Suffolk. Mr. Stone. Denbigh Castle. Mr. Griffith.] P. Oct.—Aug.

Var. 2. Veil cut at the base.

Hedw. stirp. 1. 19; *theor.* 9. 10 *to* 14, *the fructification*; *hist.* ii. 5. 24. *a, the seeds–Fl. dan.* 1001. 2–*Dill.* 45. 9.

Whole plant larger and more branched. *Capsule*, mouth fringed. *Veil* cut at the base into 6 segments; grey, bent inwards. Linn. *suec.* n. 990. *Leaves* retaining their green colour when dry.

Leersia ciliata. Hedwig. Rocks about Ludlow Castle. Ripens its capsules in summer, the preceding variety in winter. Dill. Early in the spring to July. P.

mucronula'tum. Br. Capsules oblong, bearded: shoots upright, but little branched: leaves spear-shaped, keeled. Dicks.

Hedw. stirp. i. 23.

Leaves expanded when moist, twisted when dry. *Barren* and *fertile* flowers on separate shoots, terminating. *Sheathing involucre* conical. *Fruit-stalks* 1 or 2 together, about $\frac{1}{2}$ inch long, upright. *Ring* none. *Fringe* spreading when dry, spirally twisted together when wet. *Barbula unguiculata.* Hedwig, who cites Dill. 48. 47, as a synonym, believing his plant to be the same as Mr. Hudson's *Br. unguiculatum*, but Mr. Dickson thinks they are different. From a comparison of the two, it appears to me that the leaves in Hedwig's plant are less crowded than in that of Dill. longer and more properly strap-spear-shaped, than spear-shaped, but I cannot perceive any good grounds for a specific difference. If they are distinct, Mr. Hudson's character rather applies to the plant of Hedwig, and Dickson's to that of Dillenius.

On sandy commons. Mar. Apr. P.

Br. Capsules egg-shaped: leaves spear-shaped, taper- virid'ulum.
pointed, tiled, but expanding.

Dicks. h. s.–Curt. 132. 1–*Hedw. stirp.* iii. 5–*Dill.* 48. 43–*Vaill.* 29. 5.

So small as hardly to be discernible if it did not grow in large patches. *Stems* 1 to 3 lines long, upright, seldom branched. *Leaves* very slender, sharp at the ends. *Fruit-stalks* terminating the last year's shoots, 1 or 2 on a shoot. *Capsules* egg-shaped; fringed at the mouth. *Lid* red, pointed. *Veil* pointed. Weis. *Fruit-stalks* green, changing to a pale yellow. *Capsules* from green to yellow brown, and shining. *Veil* slender, the colour of the capsule. *Lid* very short, reddish, its point bent. Dill. *Leaves* awl-shaped, quite straight, curled when dry. Dicks. *Fruit-stalk* not twisting when wet. *Caps.* red at the base and at the mouth, which is small and contracted. *Leaves* strap-awl-shaped, the mid-rib extending the whole length. Mr. Griffith.

Br. virens. Dicks. *Weisia controversa.* Hedwig. Boggy ground. Hedge banks. June.

Br. Capsules lopped: leaves flat, sharp-pointed. trunca'tulum.

Curt. 132–*Hedw. stirp.* i. 5–*Dill.* 45. 7–*Vaill.* 26. 2–*Buxb.* ii. 2. 2–*Fl. dan.* 537.

Capsules, when the lid is fallen off, appearing quite lopped, inversely egg-shaped, and yellowish red, therefore evidently distinct from the B. *viridulum.* Linn. *Fruit-stalks* 3 or 4 lines long. *Capsule* without a ring. Neck. One of the least of the Mosses; grows in patches. *Stem* 3 or 4 lines long, unbranched, ending in roses. *Lid* with a long slender point. *Veil* with a long taper point. Weis. *Sheathing involucrum* conical, lopped.

Br. truncatulum. Hedwig. Ditch banks, meadows, pastures, and heaths. A. Sept.–Feb.

Hasselquist observing this plant growing in great abundance upon the walls of Jerusalem, conjectures it may be the Hyssop of the Scripture, wherein Solomon is said to have known all plants, from the Cedar of Lebanon even unto the Hyssop, that groweth upon the wall.

Br. Capsules egg-shaped, toothed: leaves strap-shaped, rufes'cens.
pellucid, flaccid, pointing one way. Dicks.

Dicks. iii. 8. 1.

Shoots nearly upright, unbranched. *Leaves* toothed. *Fruit-stalk* terminating. *Fringe* red. *Lid* conical, a little bent.

Banks of muddy rivulets in Scotland. Dickson.

callisto'mum. Br. Capsules egg urn-shaped; toothed: nearly stemless: leaves upright, strap-awl-shaped. Dicks.

Dicks. 7. 10.

Shoots nearly stemless, upright, leafy. *Leaves* upright, strap-awl-shaped, yellow green. *Fruit-stalk* brown; thicker upwards. *Capsule* egg-shaped, brown, when dry the upper part becomes twisted. *Fringe* with a ring, toothed; ring prominent; teeth ½ the length of the capsule; upright but approaching, flattish, red orange. *Lid* conical. *Veil* not observed.

Found by Mr. Dickson on barren rocks on highland mountains in Scotland.

pal'lidum. Br. Capsules egg-cylindrical: leaves awl-shaped.

Hedw. stirp. i. 27–*Dill.* 49. 57.

Stem short, naked at bottom, or with a few very short minute leaves. *Leaves* awl-shaped, mid-ribbed, very slender, rather pointing to one side. *Fruit-stalk* 1 to 1½ inch high, pale green or reddish. *Caps.* upright. *Veil* reaching but half way round, deciduous. *Lid* bluntly conical, somewhat bent.

Specimens from J. W. Griffith, Esq. of Garn, who first found it in our island, growing on the sides of turbaries (peat holes) near Lyn Aled, Denbighshire.

B. Capsules on fruit-stalks, upright.

(3) *Stems trailing.*

hypnoi'des. Br. Capsules egg-shaped: shoots ascending: branches lateral, short, fruit bearing.

Var. 1. *lanuginosum.* Shoot branched, lying down: leaves oblong, hair-pointed; capsules oblong; veils entire.

Hedw. stirp. iii. 2–*Dill.* 47. 32–*H. ox.* xv. 5, *row* 2. 7–*Hall. hist.* 46. 4. *at* iii. *p.* 56.

Leaves a little toothed at the sides, but this most conspicuous in the dried plant. *Capsule* upright. *Mouth* fringed with 16 teeth, hair-like, separate quite down to the base. Hedwig. *Shoots* rigid, from 3 to 12 inches long; prostrate. *Branches* numerous, short, thicker than the main stem. *Leaves* slender, pale green, ending in a long grey hair. *Fruit-stalks* terminating, or nearly so; short, yellow. *Capsules* small, egg-shaped. *Lid* red, sharp pointed. Dill. *Lid* regularly conical, but very taper, and about 1-3d the length of the capsule.

Br. hypnoides α. Linn. ζ Huds. *Trichostomum lanuginosum.* Hedwig. On Snowdon and Glyder. Mendip Hills. Hills in Yorkshire. Dill. Autumn.

Var. 2. Leaves in bundles, not closely set, spear-awl-shaped, mid-ribbed, doubled together, ending in a short whitish hair; curled when dry.

Dill. 47. 28. A. *something resembles it, but that is described as hairless.*

Branched upwards. *Fruit-stalk* from $\frac{1}{4}$ to $\frac{3}{4}$ of an inch long, varying greatly in different specimens.

Br. hypnoides β Linn. and Huds. On Snowdon. Dill. and Mr. Griffith. Sometimes the branches are so short as to resemble bundles of leaves, and then the fruit-stalks are short in proportion. Dill. 47. 28. B. if furnished with hairs, would be a pretty good resemblance of it in this state. Specimens from Mr. Griffith.

Var. 3. Leaves in bundles, egg-awl-shaped, mid-ribbed, keeled, pointed with a white hair.

From 2 to 3 inches long, trailing, branches and fruit-stalks longer than in var. 1. None of the figures exactly resemble it.

Var. 4. Leaves in bundles, spear-awl-shaped, mid-ribbed, doubled together, hair-pointed, curled when dry.

Near 2 inches long. Less trailing than the preceding, but chiefly differing in the shape of the leaves, and being of a bright yellow green.

Var. 5. Leaves in bundles, spear-awl-shaped, mid-ribbed, not hair-pointed: fruit-stalks very short.

Specimen from Mr. Griffith, who thinks it ought to be considered as a distinct species; and in favour of this opinion we may observe, that all the preceding varieties have hair-pointed leaves, but this and the subsequent ones are not so. The stems more or less trailing, and the leaves growing in bundles are always sufficient to distinguish the Br. hypnoides and its reputed varieties from the Br. canescens, whilst the presence or absence of that hoariness which is caused by the hairs at the points of the leaves, will at once distinguish the 4 first varieties of the hypnoides from the subsequent ones.

Var. 6. Leaves bundled, spear-awl-shaped, mid-ribbed, doubled together, curled when dry: lid not beaked.

Dill. 47. 30.

Leaves crowded, very small, yellowish or brownish green. *Fruit-stalk* from the upper branches, $\frac{1}{2}$ inch long. Dill. It forms a cushion on the rocks. Linn. In the specimens before me some plants are distinctly male, and others female. Br. hypnoides. ♂ Huds.

On Snowdon. Dill. and Mr. Griffith. Aug.

Var. 7. Shoots long, prostrate, leaves pointing one way, in bundles or distinct, awl-shaped, bent, very slender and fine, but not hair pointed.

There is not any figure of this. The plant is brown green 4 or 5 inches long, branches few, very short; fruit-stalk scarcely longer than the leaves. Shoot distinct, composed of a bundle of brown red fibres. Specimen from Mr. Dickson.

B. Capsules on fruit-stalks. UPRIGHT.

(4) *Stems upright.*

a. Capsules roundish.

reticula'tum. BR. Capsules pear-shaped, toothed: leaves egg-shaped, serrated, reticulated. DICKS. ii. 4.

Dicks. 4. 6. *a. b.*

Shoots upright. *Leaves* distant, rather pointed, of a remarkable net-work texture, transparent, serrated towards the end, below very entire. *Fruit-stalk* from the base of the plant. *Caps.* teeth bent in. DICKS.

On Ben High in the Highlands.

penna'tum. BR. Capsules very small: fruit-stalks terminating: shoot simple, upright, wing-cleft: leaves pointing 2 ways, spear-shaped, very entire.

Hedw. stirp. 1. 29–*Dicks.* 1. 4.

Plant $\frac{1}{2}$ inch high; naked at bottom. *Barren* stems wing-cleft. *Fertile* stems, some star-like, some bearing capsules; very slender, bright green. *Leaves* distinct, egg-spear-shaped, pointing from 2 opposite lines. *Fruit-stalks* very slender, green, 1-8th of an inch long, rising out of an invol. resembling that of the barren flower. *Caps.* upright, very small, green, roundish, but lopped when the lid has fallen off. *Veil* none observed. *Lid* very blunt, reddish. *Fringe* naked. DICK. *Veil* falling off entire. HEDWIG.

Mnium Osmundaceum. Dicks. fasc. i. *Gymnostomum pennatum.* Hedwig. Hollows in old hedge banks, in a rich soil on the road from Zele to S. Tawton, 4 miles from Okehampton, Devon. Mr. NEWBERRY. B. April—June.

verticilla'tum BR. Capsules small, roundish: fruit-stalks twisted when dry: shoots all of the same height: leaves hair-pointed.

Dicks. h. s.–Dill. 47. 35.

Grows in dense tufts. *Stems* slender, adhering closely together, about an inch high; branched. *Leaves* hair-like, fine pale green, towards the bottom of the plant whitish. *Fruit-stalks* numerous, short, pale, terminating. *Capsules* small, roundish,

greenish. *Lid* very small, red, pointed. DILL. Haller unites it with the *B. æstivum*. LINN.

In Yorkshire. RICHARDSON *in Dill.* On rocks near the sea, Bangor. BREWER *in Dill.* P. April—Aug.

BR. Capsules globular; lid flat: shoot branched: leaves strap-spear-shaped, tiled but spreading: bristle-pointed. pomifor'me.

Dicks. h. s.–Dill. 44. 1–*Fl. dan.* 478–*Vaill.* 24. 9. *and* 12–*Buxb.* v. *app. n.* 4–*H. ox.* xv. 6. *row* 4. 6.

Leaves bristle-shaped. *Fruit-stalks* solitary, purplish below, *Capsules* globular. *Veil* very much pointed, very small, oblique. LINN. Grows thick together in broad patches. *Stems* about an inch high; the old ones branched, the young ones simple. *Leaves* very slender, serrated towards the ends. *Fruit-stalks* full $\frac{1}{2}$ inch long, from the ends of the younger shoots, one or more in a place. *Capsule* at first slender, when ripe globular. *Mouth* wide, fringed, the teeth turned inwards. *Veil* deciduous. WEIS. and DILL. *Leaves* mid-ribbed. Hedwig seems disposed to refer this to his new genus BARTRAMIA.

Heaths, rocks, and banks. A. Feb.—April.

BR. Capsules roundish: fruit-stalks terminating: shoot branched: leaves expanding, spear-shaped, slender. macrocar'pon.

Dill. 47. 29; A. B.. *the fresh,* C. *the dried plant–Fl. dan.* 476–*Happ.* iii. 3.

Plant yellow green; much branched; leaves slender, curled. *Caps.* brown, beak very small. DILL. *Fruit-stalk* but little higher than the tops of the shoots. *Caps.* very small. *Lid* red, with a very slender needle-shaped point.

Br. hypnoides. γ Huds. On Snowdon. Mr. GRIFFITH.

Br. Capsules egg-oblong; fringed: fruit-stalks very short: shoots nearly upright: branches expanding, rising nearly to the same height: leaves strap-spear-shaped. pa'tens.

Dicks. 4. 8. *a. b.*

Shoots somewhat slanting, nearly cylindrical, tapering towards the base, very much branched. *Branches* unequal, rather pointed, somewhat higher than the fruit-stalks. *Leaves* tiled, pressed to, the points standing out, quite straight, strap-spear-shaped, pointed, channeled. *Fruit-stalks* from the sides of the uppermost branches, few, solitary, very short, often zigzag. *Capsules* rather pear-shaped, small. *Fringe* fringed. DICKS. *Caps.* egg-oblong, as expressed in the figure.

On rocks in mountainous rivulets. On Ben Nevis, Scotland. [Rocks above the chapel at Gwydir, Caernarvonshire, Mr. GRIFFITH.]

stellig'erum. BR. Capsules semi-globular, naked: leaves strap-shaped, in star-like whirls. DICKS. ii. 3.

Dicks. 4. 4. *a. b.*

Shoots branched, star-like at the end. *Leaves* expanding, a little bowed back at the ends; somewhat whirled. *Fringe* naked. *Lid* flattish, the beak somewhat oblique; as long as the capsule. DICKS.

Woods in the Highlands.

acu'tum. BR. Capsules roundish: shoots branched, pointed: leaves bristle-shaped, upright.

Dill. 47. 34.

Slender, 1 inch high, branches 2 or 3, sometimes more. *Leaves* dark green, hairy, sharp-pointed. *Fruit-stalks* short, when young terminating. *Veil* brownish. *Capsules* short, roundish. DILL. In moist situations the capsules are rather longer, and sometimes the fruit-stalks are bent like those of Br. fragile. Mr. GRIFFITH.

Snowdon, and mountains about Llanberris. DILL. On Ben Lomond, and sides of Highland mountains. LIGHTF. [Crib y Ddeseil. Mr. GRIFFITH.]

Aug.—May. DILL.—Oct.—June. LIGHTF.

latera'le. BR. Capsules nearly globular, lateral: leaves bristle-shaped, pointing one way. LIGHTF.

Hedw. stirp. ii. 40—*Hall. enum.* 3. 8. *at p.* 109, *hist.* 46. 8, *at* iii. *p.* 56—*Hall. it. helv.* ii. 1. 2. *in opusc. p.* 300—*Fl. dan.* 823. 1; *and* 538. 3.

Stems forming tufts, from 1 to 3 inches high; almost upright, purplish, but little branched; covered at the base with fox-coloured wool. *Leaves* numerous, very green, bristle-shaped, soft, long. *Fruit-stalks* upright, short, purple. *Veil* conical, sharp, pale, deciduous. *Capsules* fringed, tawny. *Lid* conical, very short, tawny. HUDS. Male and female flowers in the same involucrum. *Fruit-stalks* short, stiff, but bending by the weight of the capsule, fixed to the end of the last year's shoot, but the growth of the new shoot makes it appear lateral. Outer fringe of 16 teeth. *Bartramia Halleriana.* Hedwig. In the B. *pomiforme*, the leaves are more equally tapering, and the fruit-stalks are longer,

[On the banks of the river Isla, Angus-shire. Mr. BROWN; who assures me that it was first discovered in Scotland by Dr. Walker on Hartfell mountain near Moffat. Boggy ground on the ascent to Crib y Ddeseil, from Llanberris. About Llyn Idwell, in the ascent to Twll dû, in great abundance. June. Mr. GRIFFITH.] P. May—Sept.

B. Capsules on fruit-stalks, UPRIGHT.

(4) *Stems upright.*

l. Capsules egg-shaped.

Br. Capsules egg-oblong: lid taper-pointed: veil reaching but half way: shoots branched: leaves strap-spear-shaped, mid-ribbed, acute. cirrha'tum.

Vaill. 24. 8–*Fl. dan.* 538. 4.

Grows in large dense patches. *Fruit-stalks* from one half to one inch, the young ones terminating, the older from the forks of the branches. *Lid* reddish, pointed, very slender, readily falling off. *Mouth* with a short fringe. WEIS.

Mnium cirrhatum. Bot. Arr. *ed.* ii. and Gmelin doubts whether it ought not still to be considered as a Mnium, arranging with the Dicranums of Hedwig. Mr. Griffith thinks this is not distinct from the Br. viridulum, and observes that the Br. viridulum at the foot of the hill gradually changed in the course of the ascent until it became Br. cirrhatum. Woods, mountainous heaths, walls, and hedge banks. P. March—July.

Br. Capsules egg-oblong, toothed: shoots nearly upright: leaves spear-shaped, concave, taper-pointed. lanceola'tum.

Hedw. stirp. ii. 23.

Stem upright, 3 or 4 lines high, rarely branched. *Leaves*, the lower ones smaller than those above. *Lid*, beak generally bent. *Veil* pale green to whitish, upright, splitting at the side.

Leersia lanceolata. Hedwig. Dry heaths. Hedge banks about Croydon. Spring and Autumn. P.

Br. Capsules cylindrical, bearded: leaves distant, spear-shaped, rounded but pointed. DICKS. linoi'des.

Dicks. iii. 8. 3.

Shoot upright, simple. *Leaves* expanding, pointed by the projecting of the mid-rib. *Fringe* twisted. *Veil* awl-shaped, twice the length of the capsule.

Pastures in Scotland. DICKS.

polyphyl'lum. Br. Capsules egg-oblong, toothed: shoots very much branched: leaves crowded, spear-shaped; curled when dry.

Hedw. stirp. ii. 31–*Dill.* 48. 41.

Resembles the Br. cirrhatum so much that they are not to be distinguished without maceration. That however is a more slender plant, has fewer fruit-stalks, and the capsules are paler. Dill.

Br. cirrhatum. β Huds. *Mn. cirrhatum.* Bot. arr. *ed.* ii. *Fissidens polycarpos.* Hedw. *Hypn. polycarpon.* Gmelin. *Syst. veg.* On Snowdon. [About Lanberris. Mr. Griffith.] Autumn.

Ray mentions a var. with much smaller leaves, it is the *Br. cirrhatum* γ Huds.

canes'cens. Br. Capsules egg-oblong: leaves crowded, spear-shaped, bent back, white haired at the ends.

Hedw. stirp. iii. 3–*Vaill.* 26. 14–*Dill.* 47. 27. *D. E. F.*

Stem upright when young, afterwards declining, and sending out a few branches of various lengths. *Leaves* spear-shaped, keeled, pressed to when dry. *Fruit-stalk* straight, $\frac{3}{4}$ of an inch in height. *Capsule* oblong-egg-shaped. *Lid* a slender cone. *Mouth* fringed with 16 long hair-like teeth, divided down to the base. *Veil* slender, long, ragged at the bottom. *Fruit-stalks* lateral. Hedwig.

Bryum hypnoides β Fl. Suec. *Trichostomum canescens.* Hedw. stirp. iii. p. 5. Differs from the B. hypnoides in its upright stem, its leaves being very slightly serrated only at the ends, and in its longer fruitstalk. Hedwig.—When moist and growing, yellowish green, when dry woolly, from the number of hairs which terminate the leaves. Dill.

Common in dry, high, barren, sandy places. Blackheath, Woolwich, Hampstead, Enfield Chace, and Dartford heath. Dill. Feb. March. P.

Var. 2. Shoots simple, or but little branched.

Dill. 47. 27. *A. B. C.*

About $1\frac{1}{2}$ inch high. *Fruit-stalk* lateral. *Capsules* upright, egg-cylindrical. *Leaves* spear-shaped, slender, keeled, hair-pointed; hairs grey and bent inwards when dry.

Specimen from Mr. Griffith, accompanied by others of a stunted growth, on bleak rocks, not $\frac{1}{2}$ inch high, and very much crowded with leaves.

Var. 3. Leaves spear-awl-shaped, mid-ribbed: shoots branched.

Dill. 47. 29.

This was considered by Mr. Hudson as a var. of the hypnoides, but though the shortness of the fruit-stalks favours that

opinion, the leaves being equally distributed, not bundled, and the want of trailing shoots, induce me for the present to place it here, not however without a disposition to believe that it is a distinct species.

Br. hypnoides. γ Huds. On some stones forming a circular wall upon the summit of Snowdon. August.

Br. Capsules egg-cylindrical, with a fringed ring: leaves ericeto'rum.
strap-spear-shaped, twisted when dry. Dicks. ii. 5.

Dill. 45. 13.

Leaves pellucid, not hair-pointed, keeled, standing out, dull green. *Capsules* slender, nearly cylindrical. *Fruit-stalks* pale brown, ½ an inch long. *Veil* and *lid* deciduous. Dill. *Shoots* terminated by stars.

Turfy heaths, Scotland.

Br. Capsules urn-shaped: fruit-stalks axillary: leaves æsti'vum.
spear-awl-shaped, without a mid-rib, doubled together.

Dill. 47. 36.

This Moss adheres together when dry, as it doubtless does when wet, like a Conferva; and when dry preserves its beautiful blue green colour. It consists of thread-like shoots crowded with very slender leaves, but dipped in water so that the shoots may separate, they appear but little branched and the leaves seem less numerous. Dill. In some specimens now before me the fine bluish green colour like that of a Cantharid is very striking. *Capsules* urn-shaped. *Fruit-stalks* about ½ inch long. Plant 1½ inch high. *Leaves* not crowded, spear-shaped, but very slender without a mid-rib, doubled together.

Br. æstivum of Huds. is *Br. capillaceum*, excluding the synon. of Dill. 47. 39, which is *Br. brevifolium*. Marshy places. Richardson in Dill. 375.

Br. Capsules egg-oblong, fringed: shoots branched: Dickso'ni.
leaves strap-shaped, keeled, rather curled when dry. Dicks.

Dicks. 7. 7.

Shoots branched, branches expanding, nearly of 1 height. *Leaves* upright, scattered, strap-shaped, keeled, dark green, those at the end forming a star; curled when dry. *Caps.* yellowish. *Mouth* red, ring slender, teeth short, upright, red. *Lid* with a long slanting beak. *Veil* slender. Dicks. *Leaves* very slender, strap-spear-shaped, with a mid-rib the whole length. *Fruit-stalk* hardly ½ inch high.

On rotten wood and decayed trunks of trees. [On a moist

rock by the petrifying spring in Garn Dingle near Denbigh. Wet rocks of Crib y Ddeseil. Mr. GRIFFITH.]

trifa'rium. BR. Capsules egg-oblong: mouth bearded: shoots seldom branched: leaves spear-awl-shaped, expanding. DICKS.

Hedw. stirp. ii. 28.

Scarcely $\frac{1}{2}$ inch high, unbranched, upright. *Lower leaves* smaller, colourless; upper ones larger, broad at the base and keeled, awl-shaped at the end, pointing 3 ways. *Swartzia trifaria*. Hedwig. *Caps.* egg-cylindrical. *Lid* conical, bent. Barren hills. DICKS. P.

cris'pum. BR. Capsules egg-shaped: fruit-stalks thicker at the top: leaves strap-shaped, broadest at the base, crowded, curled when dry.

Hedw. stirp. ii. 35–*Dill.* 55. 11–*Pet. mus. f.* 25–*Vaill.* 27. 9.

In dense tufts, so close, that the under parts decay. About 1 inch high, branched. *Barren* flowers in the bosom of the leaves. *Sheath* scarlet. *Fruit-stalks* terminating, short, straightish, thickening at the top so as to coincide with the pear-shaped capsule. *Capsule* from the above circumstance appearing pear-shaped, but it is really globular egg-shaped. *Lid* with a straight short beak. *Ring* none. *Fringe* double, 16 teeth in each. *Veil* pyramidal, hairy. HEDWIG. *Caps.* when old with 8 longitudinal streaks, in each of which lies concealed a pair of teeth belonging to the outer fringe after it has been bent back. When the seed has escaped, it contracts in the middle part. Inner fringe 8 white hairs, the points of which unite in the centre. Outer fringe 8 teeth, each of which at length splits into two. This discovery may help to account for the variable number of teeth assigned to the different species of Splachnums. Mr. GRIFFITH.

Bryum striatum. ♂ Linn. Syst. pl.

Orthotrichum crispum. Hedw. Trunks of trees. Woods near Southgate in Middlesex. [Not common. Near Bungay, Suff. Mr. STONE.] Flowers in spring. Capsules ripe in May or June. P.

vagina'le. BR. Capsules egg-shaped, toothed: shoots rather serpentine: leaves hair-like but sheathing at the base. DICKS.

Hedw. stirp. ii. 33.

Near $\frac{1}{2}$ inch high, rather waved, upright. *Leaves* serpentine, mostly pointing one way. *Beak* slender, straight. *Dicranum crispum.* Hedwig. *Capsules* urn-shaped.

Bogs in Scotland. DICKS. P.

Br. Capsules egg-oblong, with a ring, fringed: leaves pointing one way, strap-awl-shaped, stiff. Dicks. Wei'si.

Hedw. stirp. 1. 8.

Stem upright. *Leaves* awl-shaped, but broad and sheathing at the base, rigid, not curling up when dry. *Involucrum* sheathing. *Fruit-stalk* terminating, always longer than the stem, nearly upright. *Veil* slender, upright. *Lid* a blunt cone. *Fringe* single, of 16 teeth.

Weisia heteromalla. Hedwig. Woods and sandy places. May, June.

Br. Capsules inversely-egg-shaped, toothed: receptacle roundish: leaves strap-bristle-shaped. Dicks. ii. 5. splachnoi'des

Fl. dan. 538. 2.

Leaves numerous, upright, open, some bowed back. *Recept.* small, hunched, beneath the capsule. Dicks.

On rocks on Ben Nevis, Scotland.

Br. Capsules egg-shaped, fruit-stalks short: leaves stiff, hair-like, crowded. Gunner. hyperbo'reum.

Fl. dan. 538. 1.

Full $\frac{1}{2}$ inch high. *Capsules* but little raised above the foliage. *Beak* conical, slanting.

Rocks on Ben Nevis. Dicks.

Br. Capsules egg-shaped, mouth naked: shoots branched: leaves hair-like, rather bent outwards, in distinct bundles. Dicks. fascicula'tum.

Hedw. stirp. ii. 24.

Grows in dense tufts. *Beak* of the lid crooked. *Veil* small, splitting at the side. *Fringe* none. Hedwig. From $\frac{1}{2}$ to $1\frac{1}{2}$ inch high; repeatedly branched.

Gymnostomum curvirostrum. Hedwig. On rocks on Highland mountains, Scotland. Dicks. P.

B. Capsules on fruit-stalks, upright.

(4) *Stems upright.*

c. Capsules oblong.

Br. Capsules cylindrical, bearded: shoots upright: leaves spear-shaped, alternate. Dicks. ten'ue.

Dill. 48. 49.

At first slender and not branched, fruit-stalks terminating; when older becoming branched, and fruit-stalks from the forks

of the branches; reddish, short, slender. *Leaves* few, narrow. DILL. *Br. purpureum* β Huds. *Mn. purpur.* β. Bot. arr. *ed.* ii. Different from the Bryum purpureum. DICKS.
Heaths; loose sandy and gravelly soil. March.

recurviros'trum. BR. Capsules oblong, slender: beak bent: leaves spear-shaped, tiled, expanding.

Hedw. stirp. i. 7–*Dill.* 48. 45.

Stem upright, not branched, about ½ inch high. *Fruit-stalk* upright, generally terminating the old stem. *Veil* long, conical, crooked. *Lid* convex, beak straight whilst under the veil, afterwards crooked, but in a direction opposite to the bend of the veil. HEDWIG. *Stem* sometimes branched. *(see fig. Dill.) Leaves* very slender, keeled, upper ones the longest. *Fruit-stalks* red, ½ inch high, or better. *Capsules* and *lid* red. DILL.

Weisia recurvirostra. Hedwig. *Bryum curvirostrum.* Dicks. and Bot. arr. *ed.* ii. Woods in dryish places. Sandy stony places, interwoven with the grass. P. Aug.

barba'tum. BR. Capsules oblong, slender; lid taper-pointed, slanting; fruit-stalks lateral: leaves spear-shaped, acute, the upper ones expanding.

Curt. 274–*Dill.* 48. 48.

Grows in tufts, ½ an inch high, somewhat branched. *Leaves* spear-shaped, pointed. *Fruit-stalks* ½ inch or more from the base or the middle of the branch, but never terminating. *Capsules* slender. *Veil* long. *Lid* long, slender, conical. *Fringe* orange-coloured or scarlet, twisted like a screw. CURTIS. (The 45th pl. of Dill. is referred to by mistake in the observations of Mr. Curtis.) *Branches* of equal thickness, sent off from the lower part of the plant. DILL.
On walls. P. Dec.—Feb.

imber'be. BR. Capsules oblong; beak slanting: leaves slender spear-shaped, keeled, bent outwards.

Dill. 48. 46.

Fruit-stalks upright, solitary, terminating and lateral, ½ inch long. *Capsules* cylindrical, 1 line long, deep saffron coloured, blackish at the base. WEBER. *Fringe* long. HALLER. Not an inch high, upright, unbranched at first, but every year sending out branches after the flowering season. *Leaves* broad at the base, and keeled. *Barren* flower terminating. HEDWIG. Grows in dense tufts. *Stems* slender, ½ to 1 inch high, dividing into branches. *Leaves* very slender, pale green, upper leaves bent back. DILL.
Sandy heaths, ditch banks, and walls. [Bungay, Suffolk. Mr.

STONE. By the rivulet in Garn Dingle. Mr. GRIFFITH.] Winter. DILL. A. March, April. HUDS.

BR. Capsules oblong; lid taper-pointed, slanting: leaves strap-spear-shaped, keeled. HUDS. unguicula'tum.

Dicks. h. s.–Dill. 48. 47–*Buxb.* ii. 2. 9.

Shoots forming patches about ½ an inch high; sometimes branched. *Leaves* open, near a line in length and ¼ in breadth. *Fruit-stalks* terminating. *Veil* smooth, reaching but half way down the capsule. POLLICH. *Leaves* green, keeled, opake. *Capsules* oblong, thickest at the base, green, changing to brown. DILL.

Walls and sandy places. [Bungay, Suffolk. Mr. STONE.] Clay walls. HEDW. A. March, April.

BR. Capsules cylindrical; lid beaked: shoots branched: leaves spear-strap-shaped, serrated, waved, curled when dry. tortuo'sum.

Dill. 48. 40–*Hall. enum.* 4. 2, *at p.* 118, *hist.* 45. 2, *at* ii. *p.* 41–*Fl. dan.* 880. 1.–*Scheuch. it.* ii. 19. 5–*Pet. gaz.* 65. 8.

Grows in dense crisp patches. *Shoots* upright, adhering together. *Leaves* a line or 1½ line long. *Fruit-stalks* from the forks of the branches, straight, 3 to 7 lines long, closely clasped at the base by the involucrum. *Capsules* cylindrical, smooth. *Ring* none. *Mouth* fringed. *Lid* awl-shaped, straight. *Veil* smooth, extending but half way down. POLLICH. One to 1½ inch high, somewhat branched. *Leaves* very numerous, slender, crooked, curled when dry, fine green, dull yellow when old. *Veil* slender, pale green, changing to brown. *Capsules* nut-coloured when ripe. DILL.

Heaths, rocks on mountains, and woods. [On a bushy hill, half a mile from Garn, called Coed Mowr. Mr. GRIFFITH.] P. Aug.—Nov.

BR. Capsules cylindrical, fringed: shoots mostly simple: leaves spear-strap-shaped, keeled. DICKS. ii. 4. flaves'cens.

Dicks. 4. 5. *a. b–Scop.* 62. 1305. *at* ii. *p.* 321.

Shoots nearly upright. *Leaves* between upright and open, yellowish, the points when dry twisted. DICKS. Grows in broad patches. *Leaves* 2 lines long, 1-3d of a line broad. *Fruit-stalks* 1 inch long, saffron-coloured. *Capsule* slender, long. *Veil* red at the top, near 2 lines long. SCOP.

Bogs in the Highlands.

brevifo'lium. BR. Capsules oblong, tapering, imperfectly fringed: leaves crowded, strap-shaped, keeled. DICKS. ii. 4.

Dill. 47. 39.

Slender, but little branched. *Leaves* dark green, very narrow and short. *Fruit-stalks* terminating the new shoots, short. *Capsules* oblong, small, dark brown. DILL.

Bogs in Yorkshire and in Scotland.

flagella're. BR. Capsules cylindrical, toothed: shoots branched, waved: leaves awl-shaped, channeled, pointing one way. DICKS.

Hedw. stirp. iii. 1.

Fruit-stalk very slender. *Caps.* cylindrical, upright. *Lid* long, awl-shaped, bent. *Veil* splitting at the side, whitish, deciduous.

Dicranum flagellare. Hedwig.—On Ben Nevis, Scotland. DICKS. P.

capilla'ceum. BR. Capsules oblong: leaves in 2 rows, bristle-shaped, somewhat sheathing at the base.

Hedw. stirp. ii. 26–*Fl. dan.* 1000. 1–*Dicks.* 1. 6–*Hall. enum.* 4. 1, *at p.* 118, *hist.* 45. 1, *at* iii. *p.* 41.

Capsules oblong. *Leaves* expanding, bristle-shaped. HUDS. Differs from B. *heteromallum* in its open leaves, and the shape of its capsules; and from B. *flexuosum* in its fruit-stalks slender, quite straight, and not zigzag, and in the smallness of its capsules. DICKS. *Stem* undivided, upright, $\frac{1}{2}$ an inch high. *Leaves* in 2 rows, alternate. Barren and fertile flowers together, terminating. *Fruit-stalks* $\frac{1}{2}$ to 1 inch long. *Veil* opening at the side. *Capsules* cylindrical. *Lid* short, conical. *Mouth*, fringe single, teeth in pairs. HEDW. *Stalks* compressed, jointed. Mr. GRIFFITH.

Swartzia capillacea. Hedw. *B. æstivum.* Huds. 485, but not Dill. 47. 35. On rocks and moist mountainous situations. On Ingleborough, plentifully. HUDSON. About Llanberris. Mr. DAVIES. Marshy places in mountainous situations. DICKS. [Bogs, in the ascent to Crib y Ddeseil. Mr. GRIFFITH. Spinks Grove. Brome near Bungay. Mr. STONE.]

Var. 2. Leaves more crowded, shorter, roughish: capsules much smaller.

Not above half the height of the preceding. It assumes this habit when growing on rocks, or in dry situations, but still it preserves the jointed stalk, which is an unerring criterion of this species. Mr. GRIFFITH: but which seems to have escaped the notice of Hedwig. Maceration in water renders these joints visible in a dried plant.

[On the rocks above Cwm Ffynnon felen, near Llanberris abundantly. Mr. GRIFFITH.] P. Apr.—June.

C. Capsules on fruit-stalks, LEANING.

(1) *Stems none, or very short and unbranched.*

BR. Capsules cylindrical; lid conical, acute: shoot very short, unbranched: leaves egg-shaped, bluntish. subula'tum.

Curt. 214–*Fl. dan.* 1000. 2–*Vaill.* 25. 8–*Dill.* 45, 10–*Buxb.* i. 63. 2; ii. 2. 3 *and* 4.

Grows crowded together; but little branched, terminating in roses. *Capsules* cylindrical, slender, 3 or 4 lines long, becoming crooked when dry, ripe in summer. *Leaves* pellucid, pale green, with or without hairs. WEIS and DILL. *Plant* from 3 to 5 lines high. *Fruit-stalks* sometimes in pairs. *Veil* permanent, SCOP. nearly as long as the capsule. *Fruit-stalks* terminating, from $\frac{1}{2}$ to 1 inch long. *Capsule lid* very long; the teeth twisted together when old into an oblong shape with a brush-like point. *Leaves* with a strong mid-rib, ending in a longish grey hair which falls off when the leaf is old.

Moist banks, woods, roofs, and walls. P. Jan.—May.

BR. Capsule long and tapering at the base: shoot upright: leaves strap-spear-shaped. elonga'tum.

Hedw. stirp. i. 36.

Hardly $\frac{1}{2}$ an inch high, upright. Barren and fertile flowers terminating, but on different plants. *Fruit-stalk* straight, upright, but a little bent at the top by the weight of the capsule. *Capsule* oblong, leaning, its lower part a cellular substance, not containing seeds. *Lid* convex, beak short. *Mouth* with a double fringe, 16 teeth in each.

Pohlia elongata. Hedw. Woods near Loch Ness, Scotland.

[On Ben Lawers, along with Br. Zierii. Mr. RROWN.] May—Aug.

BR. Capsules a little leaning, toothed: shoots upright, short: leaves hair-like, upright, rigid. DICKS. par'vulum.

Hedw. stirp. ii. 29. B.

Grows in patches. Scarcely a line in height. *Leaves* concave and dilated at the base, fine green, without a mid-rib. *Fruit-stalk* yellow green. *Caps.* egg-shaped. *Beak* long, slanting, reddish at the base.

Dicranum pusillum. Hedwig. Pastures in Scotland. DICKS. Aug. P.

B. Capsules on fruit-stalks, LEANING.

(2) *Stems upright.*

strumife'rum. BR. Capsules nearly upright, pear-shaped; toothed: receptacle crooked: leaves strap-spear-shaped, mostly pointing one way.

Hedw. stirp. ii. 32.

Caps. scored at the mouth, pear-shaped, but crooked, with an irregular knob at the base. *Beak* bent, fine red at the base.

Fissidens strumifer. Hedwig. *Hypn. strumosum.* Gmel. *syst. veg.* Boggy meadows in Scotland. DICKS.

fal'lax. BR. Capsules oblong, mouth bearded: shoots somewhat branched: leaves strap-spear-shaped, expanding, bent outwards. DICKS.

Hedw. stirp. 1. 24.

Different from the Br. imberbe, which has the leaves strap-awl-shaped and straight, and the beak of the lid conical. *Barbula fallax.* HEDWIG. but not his synonyms. DICKS. Full ½ inch high. *Leaves* curled when dry. *Lid* slender, nearly cylindrical, not quite straight.

In Scotland, and in Yorkshire.

crispa'tum. BR. Capsules fringed, shoots branched: leaves strap-shaped, channeled, curled.

Dicks. 7. 4.

The size of Br. virens. *Shoots* upright. *Leaves* upright, twisted, curled, a little toothed. *Cal.* slightly contracted in the middle, scored when dry. DICKSON. *Capsules* fringed; fringe very long for the size of the plant. *Lid* depressed; beak long, slanting. *Leaves* pellucid, decurrent. Mr. GRIFFITH.

Bogs in Scotland. [On the rocks of Crib y Ddeseil, Cwm Idwel, and Clogwyn y Garregog, near Llanberris. Mr. GRIFFITH.]

longifo'lium. BR. Capsules oblong, toothed: shoots elongated, rather leaning, sometimes branched: leaves hair-like, pointing one way. DICKS.

Hedw. stirp. iii. 9.

An inch high or more, growing shoot upon shoot; delicate, feeble, but upright. *Leaves* sheathing at the base, very long and slender upwards, rather bent back and pointing one way. *Caps.* oblong, rather swollen on one side. *Lid* awl-shaped, slanting, reddish. *Veil* delicate, pale.

Dicranum longifolium. Hedwig. Banks of rivulets in the Highlands of Scotland. DICKS.

Br. Capsules oblong, slender : fruit-stalks twisted : leaves flexuo'sum. bristle-shaped.

Dicks. h. s.–Dill. 47. 33. A. B. C. D. E.

From $1\frac{1}{2}$ to 3 inches high. *Leaves* strap-awl-shaped; in bundles. *Fruit-stalk* twisted like a corkscrew. *Caps.* upright. *Lid* conical, pale red. This larger growing plant seldom bears fruit, and when dry assumes a darker colour than the following variety, but I see no reason for believing them distinct species.

Ireland. Rocks about Llanberris. Dill. P. April—June.

Var. 2. Smaller and shorter.

Dill. 47. 33. F. G.

About an inch high, but little branched, slender, thicker upwards. *Leaves* hair-like, yellow green. *Fruit-stalks* green, turning, yellowish, variously bent and twisted. *Capsules* oblong, slender. *Lid* pointed, red. *Veil* whitish. Sometimes 2 or 3 fruit-stalks arise from one branch. Dill. From $\frac{1}{2}$ to 1 inch high. *Br. fragile.* Dickson. I see no reason for making it distinct from Br. flexuosum, with which it agrees in habit, in the shape of its leaves, and in its waved fruit-stalks. I have not observed it particularly brittle in its dried state. Mr. Griffith.

[About Llyn Aled, Denbighshire. Mr. Griffith.]

Var. 3. Very tall, not bearing capsules.

Dill. 32. 3.

[Cwm Idwell, near Twll dû, Caernarvonshire. Mr. Griffith.] *Sphagnum alpinum.* Linn.

In the autumn of 1788, some plants of the Sphagnum alpinum which I brought from Snowden were placed in a shady corner under a water spout; the result was a conviction that the Sphagnum alpinum is only a variety of the Br. flexuosum. Its luxuriant growth in bogs accounts for its want of capsules. Thus the Polytrich commune, on the quaking bogs of Delamere Forest, often grows to the length of $\frac{3}{4}$ of a yard, but in that state it never bears fruit. Mr. Griffith.

Obs. When the Br. flexuosum is moist, the capsules lie concealed amongst the leaves by a singular hygrometric quality in the fruit-stalk; but as the moisture exhales, they become nearly upright by several spiral revolutions from the right to the left. In Mn. heteromallum the revolutions of the fruit-stalk are from the left to the right. Mr. Griffith.

Br. Capsules nearly upright, somewhat globular : shoots tetrago'nal, 4-cornered, the younger tendril-like : leaves pressed to, strap-awl-shaped. Dicks. ii. 8.

Dicks. 4. 9. *a. b.*

Full grown shoots upright, with leaves disposed in 4 rows, blackish, yellowish green above, sometimes sending out young shoots from the ends; *young shoots* zigzag like a climbing plant, reddish. *Leaves* of the full grown shoots very closely tiled, pressed to, upright, strap-shaped, awl-shaped towards the ends; those of the young shoots minute, egg-shaped, few. *Capsules* upright, somewhat oblique, mouth contracted. *Fringe* with a ring. DICKS. The fringe is without doubt simple. The young slender zigzag shoots figured and so minutely described by Mr. Dickson are only produced when the plant is placed in a moist and somewhat warm situation, almost entirely secluded from light and air, neither are they peculiar to this species, for I have produced them in Mnium purpureum, &c. &c. merely by placing it in such situations as I have described: in all cases where these are produced, I have further remarked that they invariably point in that direction from whence the very small portion of light or air entered, as to the hinge of the botanical box when the experiment was made in it. Mr. BROWN.

Ben Lomond, Scotland. [Also on Malghyrdy Benteskerney, Ben-Lawers, Lochain y Gar, and in great abundance on Craig Cailleach; on the bare ground; never found but at alpine heights. Mr. BROWN.] P. July—Oct.

Davie'sii. BR. Capsules egg-shaped, lopped, toothed: shoots branched: leaves crowded, strap-shaped, curled when dry, DICKS.

Dicks. 7. 6.

Shoots nearly upright, branched, crowded with leaves. *Leaves* brown yellow when dry. *Fruit-stalk* terminating, short. *Capsule* brown yellow. *Fringe*, teeth short, bent inwards. *Lid* with a slender crooked beak. *Veil* distended, ragged at the bottom. DICKS.

Discovered by Mr. Davies on the mountains of Wales.

inclina'tum. BR. Capsules egg-shaped, leaning: leaves hair-like, spreading, sheathing. DICKS.

Hedw. stirp. ii. 27.

About 1 inch high, unbranched, upright. *Leaves* alternate, pointing 2 ways.

Swartzia inclinata. Hedwig. Turf bogs in Scotland. DICKS. [And N. of Ireland, not uncommon. Mr. BROWN.] P. June—Aug.

biparti'tum. BR. Capsules egg-oblong, somewhat slanting, finely toothed: shoots cloven: leaves spear-shaped, acute, keeled, tiled, open. DICKS. ii. 7.

Dill. 49. 58.

Branches and *fruit-stalks* in pairs. *Capsules* oblong, brownish. *Lid* short. *Veil* slender, pointed. *Leaves* narrow, keeled, dark green. DILL.

Hedges in gardens, walls and ditch banks, common.

Feb. March.

BR. Capsules cylindrical; lids conical, acute: shoot branched: leaves reflected, inversely egg-shaped, blunt, hair-pointed. rura'le.

Hedw. hist. i. 6. 28 *to* 32–*Dill.* 45. 12–*Vaill.* 25. 3–*H. ox.* xv. 6. *row* 3. 1, *and row* 4. 2–*Buxb.* v. 44. 1.

Branched, 1 or 2 inches high, stellated at the ends. *Leaves* numerous, broad-spear-shaped, pointed. *Fruit-stalks* an inch high, surrounded by an involucrum at the base. *Capsules* cylindrical; mouth with a long fringe. *Lid* a long cone. WEIS. Grows in dense and elevated tufts. *Stems* upright, branched, 1 to 2 inches high. *Leaves* crowded, standing open, fine yellowish green when wet, but dull greyish and brownish in dry seasons. DILL.

Roofs both thatched and tiled, walls and trunks of trees.

P. Dec.—April.*

BR. Capsules cylindrical: lids taper-pointed: fruit-stalks terminating: shoot branched, upright: leaves spear-shaped, rather expanding.

Schmid. 56. 1–*Fl. dan.* 229–*Happ.* ii. *Mnium.* 5–*Dill.* 31. 1 andro'gynum –*Vaill.* 29. 6–*Mich.* 59. 8. *H. K. e.*–*Neck. meth.* 1. 4–*H. ox.* xv. 7. *row* 2. 20.

Grows in dense patches; better than half an inch high. *Involucrum* none. POLLICH. *Barren flowers* terminating, globular, on fruit-stalks only half the length of those bearing capsules. From one half to near 2 inches high, generally branched, nearly upright. *Leaves* not crowded, short, very narrow, pale green, pointed. DILL.

Mnium Androgynum. LINN. Woods, heaths, and walls. Roots of trees in moist sandy woods, dry shady banks by the sides of heaths. Crib y Ddeseil. Mr. GRIFFITH. A. March, Apr.

BR. Capsules nearly upright; oblong: fruit-stalks mostly solitary: leaves spear-shaped; keeled; waved; expanding; serrated.

* When this takes to grow upon thatched buildings so as to cover undula'tum the thatch, instead of lasting but about ten years it will endure for an age. LINN.

Dicks. h. s.–Curt.–Hedw. stirp. 1. 16–*Dill.* 46. 18–*Vaill.* 26. 17–*H. ox.* xv. 7, *row* 1*st*, 9.

Stem 1 to 3 inches, upright, unbranched. *Leaves*, the upper ones largest, viz. 2 or 3 lines long, and 1 broad. *Fruit-stalks* terminating, upright, 1 to 2 inches high; sometimes 2 together. *Capsules* oblong, leaning, bent. *Lid* sharp pointed, marked with a scarlet circle. Weis. *Sheathing* involucrum pyramidal, its top closely embracing the fruit-stalk. *Veil* cylindrical, splitting on one side. *Capsules* cylindrical. *Lid* convex; beak very long. *Fringe* of 32 teeth; single. Hedwig. *Stem* in part buried in the ground. *Leaves* deep green, thin, pellucid, very finely serrated, soon curling up when the plant is gathered. Dill. *Leaves* strongly midribbed, serrated and waved at the edge. It has much of the habit of a Polytrichum.

Polytrichum undulatum. Hedwig. Shady banks, woods about the roots of trees, and heaths. Aug.—Feb. P.

linea're. Br. Capsules nearly upright, oblong, fringed: shoots upright, unbranched: leaves strap-spear-shaped, tiled, but expanding. Dicks.

Dicks. iii. 8. 2.

In crowded patches. *Leaves* green, yellow. *Fruit-stalk* terminating, much thicker upwards. *Caps.* brown. *Fringe* long, red. *Beak* slanting, blunt.

Wet sandy banks in the south of Scotland. Dickson.

D. Capsules on fruit-stalks, drooping.

(1) *Stem none, or very short and unbranched.*

car'neum. Br. Capsules somewhat globular; leaves alternate, acute.

Hedw. stirp. 1. 20–*E. bot.* 360–*Dill.* 50. 69–*Buxb.* ii. 2. 5, *and* 6–*Hall. enum.* 4. 6. *at p.* 118. *hist.* 45. 6, *at* iii. *p.* 41.

Shoots upright, single, or in tufts, dividing into several branches 4 or 5 lines long. *Leaves* $\frac{1}{2}$ or 1 line long, $\frac{1}{2}$ a line broad, not hairy at the end, very entire. *Fruitst.* terminating the shoots and the branches, 3 or 4 lines long. *Capsules* roundish, egg-shaped. *Ring* none. *Lid* short, bluntish. *Veil* smooth, reaching but half way down. Pollich.

Bryum delicatulum. Hedwig. Moist watery places and pastures. [Wet drains near the bath, Ditchingham, Norfolk. Mr. Stone.] Summer. Dill.—March, April. Huds.

Var. 2. Capsules green. Branches and fruit-stalks longer. *R. Syn.* p. 102. n. 52.

Dill. 50. 69. G.

Yorkshire. Mr. Richardson.

Br. Capsules roundish: leaves bristle-shaped. Dicks. ii. 7. recurva'tum.

Hedw. stirp. 1. 38–*Jacq. Misc.* ii. 12.

Original stem hardly $\frac{1}{2}$ a line in height; very brittle when dry. *Leaves* expanding, lower ones spear-shaped. *Barren* flowers in the bosom of the leaves. *Fruit-stalks* terminating, at first straight, then arching downwards, becoming straighter again when old and dry. *Capsule* pear-shaped. *Lid* convex, beak slender, crooked. *Fringe* single, with 16 teeth. *Veil* splitting at the side, bent like the beak of the lid.

Grimmia recurvata. Hedwig. Barren grassy places. Calcareous rocks. Spring—Autumn.

Br. Capsules pear-shaped; lid conical: shoot but little branched: leaves strap-shaped. minioi'des.

E. bot. 389–*Dill.* 50. 60–*Hedw. stirp.* 1. 3–*Hall. enum.* 4. 7, *at p.* 118, *hist.* 45. 7. *at* iii. *p.* 41.

In this and in the Mn. *crudum*, the stem is half as long as the fruit-stalk. Beautifully shining. *Leaves* of a greenish golden hue. Linn. Forming a firm turf. Distinguishable by its long slender leaves. *Fruit-stalks* an inch or more in length, terminating, purple, shining, issuing from a brownish green involucrum. *Stellated* shoots with longer leaves. Weis. *Fruit-stalks* serpentine, pale red to golden yellow. *Capsules* pear-shaped, green, changing to yellow red. Dill.

Bryum aureum. Huds. *Webera pyriformis.* Hedwig. *Mnium pyriforme.* Bot. arr. *ed.* ii. Rocks in Nottingham Park. [Berwyn Mountain, in the road between Bala and Llangunnry, and on Snowdon. Mr. Wood.]

P. March—June, [and July. Mr. Wood.]

Var. 2. Capsules egg-cylindrical.

H. ox. xv. 6. *f.* 20.

This plant has the foliage of the Br. hypnoides, and the capsules of the Br. sericeum. The structure, however, of the fringe, accords with the former. It varies much in size, the shoots from $\frac{1}{2}$ to 1 inch, and the fruit-stalks from 1 to two inches.

Specimens from Mr. Griffith, who found it on turbaries about Llyn Aled, Denbighshire; also about Llanberris. Dillen. in Hist. Musc. inadvertently refers the above figure to his own 51. 72, but it is very different from that, and possibly may prove a distinct species.

Br. Capsules egg-shaped: shoots cylindrical, tiled, smooth: argen'teum. leaves egg-spear-shaped, hair-pointed.

Dill. 50. 62–*Curt*, 166–*Fl. dan.* 880. 2–*Vaill.* 26. 3–*H. ox.* xv. 6. *row the last*, 17.

Grows in patches, about ½ an inch high, dividing into cylindrical shoots 2 or 3 lines long. *Leaves* egg-spear-shaped, ending in hairs, but so pressed to the stem as hardly to be discernible to the naked eye. *Fruit-stalks* from the base of the shoots, near ½ an inch high. *Capsules* egg-shaped, upright when green, pendent when ripe. *Lid* short, blunt. *Mouth* fringed. *Veil* deciduous. Weis. In autumn and early in winter green, afterwards shining, silvery white, especially when dry, which circumstance alone is sufficient to distinguish it from all other mosses. Dill.

Sunny banks, walls, roofs, and rocks. P. Oct.—Feb.

Var. 2. Shoots greener. Leaves not hairy.

Dill. 50. 63.

Pale or darker green, sometimes shining. *Leaves* more crowded than in (1.) not hairy. *Capsule*, mouth not fringed. Dill.

On the gravel walks of the Oxford Physic Garden. Dill. Jan.—March.

Zie'rii. Br. Capsules club-shaped, long: shoots cylindrical: root-leaves expanding, longer than the stem-leaves. Dicks. ii. 8.

Dicks. 4. 10.

Shoots simple, upright, pointed, of a flesh-coloured whitish hue, green towards the end. *Leaves* closely tiled, pressed to, egg-shaped, pointed, ribless, transparent, the ends when dry reclining. *Root-leaves* surrounding the shoots, expanding, spear-strap-shaped, with a rib, taper-pointed, thrice as long as the rest. *Fruit-stalk* from the base of the plant, thrice as long as the shoots. *Capsule* depressed-pendent, when moist rather upright, on a crooked fruit-stalk, in the dry plant club-shaped, very much elongated and tapering at the base, the surface somewhat granulated. *Fringe* with many teeth. *Lid* short, pyramidal. Veil not observed. Dicks.

Moist banks in the Highlands. Near Aberfeldy. [Crib y Ddeseil, Caernarvonshire. October. Mr. Griffith.]

seri'ceum. Br. Capsules cylindrical; lids conical, dagger-pointed: shoot simple: leaves egg-spear-shaped, closing.

Hedw. hist. i. 4. 16 *to* 19–*Dill.* 50. 61–*Hedw. stirp.* 1. 4.

About ½ an inch high. *Stamens* and *pistils* in the same flower. *Fruit-stalk* from 1 to 2 inches high. *Capsules* pendent, but after discharging their seeds upright. *Lid* convex, beak very short. *Mouth*, fringe double, each of 16 teeth. Hedwig. *Stems* short. Lower leaves few, shrivelled, brown. Upper leaves fine pale green. Plants without capsules, taller. Dill.

Webera nutans. Hedwig. *Bryum sericeum.* Huds. and Bot.

art. *ed.* ii. Woolwich Heath, and Snowdon, about Llanberris, on Ingleborough, and other places in Yorkshire. [Clogwdn y Garnedd, and Crib y Ddeseil, Caernarvonshire. Mr. GRIFFITH.]
P. March—July.

D. Capsules on fruit-stalks, DROOPING.

(2) *Stems upright.*

BR. Capsules egg-shaped, toothed: shoots in bundles: leaves spear-shaped, keeled, acute. DICKS. — nigri'tum.

Hedw. stirp. iii. 39.

Plant black green. *Fruit-stalk* black red. *Caps.* shining, black, brittle. *Lid* convex, with a small point.
Weisia nigrita. Hedwig. Boggy heaths, Scotland. DICKS. P.

BR. Capsules roundish; veils minute: shoot branched: leaves oblong, mid-ribbed, hair-pointed. — pulvina'tum.

Dill. 50. 65–*Happ.* iii. *Bryum* 1–*Vaill.* 29. 2–*Pet. gaz.* 95. 15–*H. ox.* xv. 6, *row the last,* 21. *p.* 629.

Grows in a tuft or round cushion. *Fruit-stalks* green, short, bowed down, so that the capsule presses upon the leaves. *Caps.* egg-shaped. *Veil* very thin, very short, barely covering the lid. *Lid* taper-pointed. LINN. *fl suec.* n. 993, under B. *murale.* *Fruit-stalks* bending down so that the capsules are buried in the foliage; but in some stages of growth they are upright. NECK. In circular convex dense patches, about ½ inch high. *Leaves,* the lower ones brown and without hairs. *Fruit-stalks* terminating, very short, at first upright, but as the capsule ripens bending down. *Mouth* toothed. *Veil* deciduous. *Lid* short, pointed. WEIS.
Walls and roofs; the most common of all the Mosses.
March, April.

Var. 2. Capsules shorter and rounder: plant white with hoary hairs.
Specimens sent by Mr. Griffith. The uppermost leaves ending in very white hairs, as long or longer than themselves.

BR. Capsules club-shaped, oblong: shoots and fruit-stalks bent: leaves arrow-shaped, points bordered. DICKS. ii. 9. — cubita'le.

Dicks. 5. 2.

The largest of all the Bryums. *Shoots* somewhat branched, rather recumbent at the base. *Leaves* expanding, taper-pointed, with a thick mid-rib and reddish edge. *Fruit-stalk* terminating,

very long, a little above the base with an elbow-like bend, of a gold coloured reddish brown, brightly glittering. *Capsule* depressed and pendent, club-shaped, very long. *Fringe*, teeth numerous, upright. DICKS. *Stems* trailing near the root, often 3 inches long. *Fruist.* 2 to 3 inches long. Mr. GRIFFITH. *Leaves* sometimes bristle-pointed, but not always so. In the specimens of smaller growth the stems are nearly upright, and the bend at the base of the fruit-stalk is less observable.

On the moist banks in the Scotch mountains, near Aberfeldy. [On wet brows by the sides of rivulets in the neighbourhood of Snowdon; Mr. GRIFFITH, who considers this plant as not specifically distinct from the Br. alpinum.]

alpi'num. BR. Capsules egg-cylindrical: fruit-stalk axillary: shoots branched: leaves tiled, spear-shaped, mid-ribbed, pointed, keeled.

Dill. 50. 64.

Grows densely compacted; variously branched; branches irregular in length. *Leaves* very numerous, oblong, keeled, straight, acute; opake, smooth, shining, purplish green, but in old plants dark purple below, dark red above. Barren branches taper at the end, those with fruit-stalks broader. *Fruit-stalks* an inch high, dark red purple, issuing from a large purple tubercle. *Veil* purplish. DILL. *Leaves* pressed to when dry. GRIFFITH. The younger ones pellucid.

Rocks covered with a thin layer of earth in the ruins of an old castle near Llanberris. DILL. [Also by the side of Llyn Ogwen, generally growing in tufts, detached from all other kinds of moss. As figured by Dill. 50. 64. C; on the small dripping rocks by Hendre dwyfan bridge near Cerig y druidon; Denbigsh. Mr. GRIFFITH.] P. Apr.—June.

margina'tum. BR. Capsules egg-cylindrical; lid beaked: leaves egg-spear-shaped, pointed, finely toothed, bordered. DICKS. ii. 9.

Dicks. 5. 1. *a. b.*

Shoots mostly simple. *Leaves*, teeth remote, the midrib and edge red and thick. *Fruit-stalks* solitary. *Caps.* half egg-shaped. *Lid* conical. *Veil* awl-shaped. DICKS.

Pastures, Scotland.

HYP'NUM. *Fruit-stalk* from a lateral tubercle, fenced with scales: *capsule* outer fringe with 16 teeth.

MALE a bud, generally on a different plant.

SUBDIVISIONS OF THE HYPNUMS.

A. (1) Unbranched, winged with leaves: capsules upright.
(2) Unbranched, winged with leaves: capsules leaning.
(3) Branched; branches winged with leaves: capsules leaning.
(4) Branched; branches winged with leaves: capsules drooping.

B. (1) Branches irregular; leaves irregular: capsules upright.
(2) Branches irregular; leaves irregular; capsules leaning.

C. (1) Shoots winged with branches; branch leaves tiling: capsules upright.
(2) Shoots winged with branches; branch leaves tiling: capsules leaning.
(3) Shoots winged with branches; branch leaves tiling: capsules drooping.

D. (1) Leaves bent back: capsules upright.
(2) Leaves bent back: capsules leaning.

E. Plant shrub-like: branches in bundles.

F. (1) Shoots nearly cylindrical: capsules upright.
(2) Shoots nearly cylindrical: capsules leaning.
(3) Shoots nearly cylindrical: capsules drooping.

G. (1) Shoots crowded: capsules upright.
(2) Shoots crowded: capsules leaning.

A. (1) *Plant unbranched, winged with leaves. Caps. upright.*

H. Fruit-stalks terminating; capsules oblong, lid acute: bryoi'des. leafits spear-shaped, acute.

Hedw. stirp. iii. 29–*E. bot.* 625.–*Dill.*34. 1–*Vaill.* 24. 13 –*Fl. dan.* 473. 1–*H. ox.* xv. 6. *row* 4. 11–*Buxb.* i. 64. 3.

Very small, but distinguished by its *capsules*, edged at the mouth with a deep red fringe. LINN. The smallest of the ge-

nus. *Shoots* 2 or 3 lines long. *Leafits* 7 or 8 pair. *Fruit-stalks* as long, or longer than the shoots, generally solitary. *Capsules* upright, egg-shaped. Weis. Many growing together as if from one root, but each plant has its separate rate, though sometimes 2 or 3 shoots spring from one root. *Shoots* not branched, short, reclining. *Leaves* green, not pellucid. *Capsules* small, upright, oblong, green. *Veil* very small, greenish. *Lid* scarlet. *Fruit-stalks* reddish, issuing from near the end of the shoots, and without any evident involucrum. Dill. Mid-rib of the leafits pellucid Mr. Stackhouse.

Fissidens bryoides. Hedw. Shady places, woods, and ditch banks. A. Feb.—May.

A. (2) *Unbranched, winged with leaves. Capsules leaning.*

denticula'tum H. Seldom branched: fruit-stalks from the base: capsules cylindrical: lid blunt: leaves wedge-shaped, acute, in pairs, 2-rowed.

Dill. 34. 5—*H. ox.* xv. 6. *row* 1. 36—*Vaill.* 29. 8.

Leafits triangularly egg-shaped, hooked. Webber. Shoots several, lying on the ground, $\frac{1}{2}$ to $1\frac{1}{2}$ inch long, seldom branched. *Leaves* in a double row on each side, soft, pellucid, shining, pale, green, pointed and bent back towards the end. *Fruit-stalks* from the base of the shoots, reddish, an inch or more in length. *Capsules* oblong, straight, covered by the veil, which is of a straw colour; becoming bent as it approaches to maturity. *Lid* short. Dill.

Woods, and moist shady places on the ground, and on trunks of trees. P. March, April.

asplenioi'des. H. Nearly upright: fruit-stalks terminating: capsules nearly cylindrical; beak bent: leafits spear-shaped, blunt.

Dicks. h. s. and fasc. 5. 5.

Habit that of H. *adiantoides,* but smaller, and the fruit-stalk always terminating. *Leaves* tiled at the base, almost embracing the stem, spear-shaped, bluntish, somewhat keeled, the midrib reddish, sometimes rolled in at the ends. *Beak* slanting, white, as long as the capsule. Dicks.

Bogs in the Highlands, near Ben Lomond.

A. (3) *Branched; winged with leaves: capsules leaning.*

trichoma- noi'des. H. Leaves oblong, blunt, hollowed on the under edge: capsules nearly cylindrical: beak bent.

Dill. 34. 8.

Leaves convex above, the ends reflected. DILL. *Leaves* inversely egg-shaped, but somewhat hollowed on the under edge: very broad at the end, but with a minute point. *Fence* leaves spear-awl-shaped. Capsules nearly upright.

Hypn. complanatum. β Huds. and Bot. arr. *ed.* ii. Ditches in woods, and roots of trees. P.

H. Plant somewhat branched: fruit-stalks from the side: capsules nearly cylindrical: lid conical, short: leafits spear-shaped. adiantoi'des.

Dicks. h. s.–Hedw. stirp. iii. 26–*E. bot.* 264–*Dill.* 34. 3–*Vaill.* 28. 5–*Buxb.* ii. 1. 4.

Two or three inches long, straight; leafits 12 to 16 pair. *Fruit-stalks* 1 inch high. NECK. Branched from the base. *Leaves* not pointed. *Capsules* leaning. *Lid* red. *Veil* as long as capsule. SCOP. Upright, branched. *Leaves* shining. *Fruit-stalks* red, lateral. *Capsules* brownish, turning red. *Lid* scarlet, pointed. DILL. *Leafits* not serrated as mentioned by Leers. Mr. GRIFFITH.

Fissidens adiantoides. Hedw. Bogs; moist heaths. [Crib y Ddescil, and Clogwyn y Garnedd. Mr. GRIFFITH.] P. March, April.

H. Plant branched, trailing: fruit-stalks from the side: leafits acute. sylvat'icum.

Dill. 34. 6.

Shoots branched. Branches undivided, few, not shining. *Fruit-stalks* lateral. *Lids* of the capsule pointed. DILL.

Woods at the roots of trees. [Rivelston Wood near Edinburgh. Dr. J. E. SMITH.—Near Bungay, Suffolk. Mr. STONE.] P. April, May.

H. Plant flatted, much branched: capsules egg-shaped: lid conical: leaves in 2 rows, tiled, bluntly egg-shaped, doubled together. complana'tum.

Dill. 34. 7–*Vaill.* 23. 4; *and* 21. 17–*H. ox.* xv. 5. *row* 2. 5, *and row* 3. 15.

Forming broad leafy strata on the trunks of trees. Plant from 1 to 3 or 4 inches long, creeping. *Leafits* alternate, in 2 rows, in the young shoots very closely crowded. *Fruit-stalks* ½ an inch high, numerous on the mid-rib, or from the fork of the branches. *Fence* large, hairy. *Capsules* egg-shaped. *Lid* conical, beaked. WEIS. Two or three inches long. *Branches* opposite, or alternate. *Leaves* soft, pellucid, yellow green, shining. *Fence* scaly. *Veil* slender, whitish, crooked. DILL.

Trunks of trees. P. March, April.

A. (4) *Branched, winged with leaves: capsules drooping.*

taxifo'lium. H. Unbranched; fruit-stalks from the base: capsules oblong; lid taper-pointed: leafits oblong, acute.

E. bot. 426–*Dill.* 34. 2–*Vaill.* 24. 11–*Fl. dan.* 473. 2.

Leafits about 12 pair on each shoot, when young; more in the older shoots. *Capsules* nearly cylindrical, drooping, broadest at the mouth. *Veil* turned up at the end. WEIS. *Leaves* spear-shaped, with a point at the end. WEBBER. *Shoots* several from one root, not branched; dark green. *Fence* at the base of the shoots, composed of a few scales. *Lid* scarlet, beak pointed, crooked. *Veil* pale. DILL.

Woods, hedges, and shady banks. Feb.—May.

rotundifo' lium. H. Branched: fruit-stalks lateral: capsules egg-shaped.

Scop. 62. 1333, *at* ii. *p.* 321.

Shoots slender, hardly 1 inch long, not numerous. *Leaves* thinly set. *Capsules* reddish; mouth with 2 rows of fringe. *Lid* with a slender beak. *Veil* white, chaffy. SCOP.

Woods at the roots of trees, Scotland, [and on walls. SCOP.]

lu'cens. H. Shoots branched; branches winged with leafits: fruit-stalks lateral: capsules drooping: leafits egg-shaped, dotted.

Dicks. h. s.–Dill. 34. 10–*Schmid.* 57. 2.

Trailing. *Branches* brittle, blunt. *Leaves* egg-shaped, pointed, flat, shining as if wet with dew. *Fruit-stalks* 1½ inch long, lateral. *Capsules* nodding. SCOP. *Shoots* about 2 inches long, sometimes branched. *Leaves* large, thin, soft, pellucid, pale green, placed alternately in 2 or 3 rows. *Capsules* small for the size of the plant, egg-shaped, more or less nodding, dark brown. *Lid* spit-pointed. *Veil* straight, sharp, whitish. DILL.

Woods, wet ditches, wet shady marshy places.

P. April—June.

B. (1) *Branches irregular; leaves irregular; capsules upright.*

stella'tum. H. Shoots upright: leaves egg-shaped, ending in long points, rather expanding, coloured.

Dicks. h. s.–Dicks. 1. 7–*Dill.* 39. 35–*Vaill.* 28. 10.

Shoots somewhat branched, somewhat tawney at the base, yellowish at the end. *Leaves* spear-awl-shaped, the ends standing out. *Fruit-stalks* few, lateral, nearly an inch long, almost upright, red. *Capsules* egg-shaped, but bulging on one side.

Lid short, pointed, distinguishable at first sight from H. *cuspidatum*, by the leaves at the ends of the stems not being rolled in, but expanding. DICKS.

Turfy bogs. RELH. *n.* 1018. [Low wet meadows in Earsham, near Bungay, Suffolk. Mr. STONE.]

H. Shoot upright, somewhat branched, bent; leaves tiled, sciuroi'des. egg-spear-shaped, hair-pointed: capsules oblong; lid conical.

Dill. 41. 54–*Vaill.* 27. 12–*Kniph.* 6–*H. ox.* xv. 5, *row the last*, 27.

Shoots 2 inches long, cylindrical. *Involucrum* rising half way up the fruit-stalk. NECK. *Stem* creeping, 3 or 4 inches long. *Shoots* from 1 to 1½ inch; seldom branched. *Leaves* closely tiled, egg-spear-shaped, pointed, ending in hairs. *Fruit-stalks* lateral, upright, ½ inch high. *Involucrum* slender, scaly. *Capsules* cylindrical-egg-shaped. *Lid* conical, pointed. *Fringe* white. *Veil* yellow at the end. WEIS. Creeping, interwoven, fixed to the bark of trees. *Branches* numerous, upright, simple or divided, but generally bent like the tail of a squirrel. *Involucrum* at the base of the branches, slender, scales narrow, ending in short hairs. *Capsules* upright, dark brown when ripe. *Lid* very small, *Fruit-stalks* twisting when dry. DILL.

Trunks of old trees. [Bungay, Suffolk. Mr. STONE.]

P. Feb.—April.

H. Branches compressed: leaves hair-pointed, shining: refus'cens. capsuler upright; lid conical. DICKS.

Dicks. 8. 4.

But little branched; branches cylindrical but flatted, entirely covered with the tiled leaves, which are slender, straight, spear-shaped, ending in a hair, seldom a full green, but generally yellowish or reddish. *Capsules* nearly cylindrical, slender, upright. *Fringe* white. *Lid* crimson, conical, acute. HALLER. Has been confounded with the Hypn. nitens, but differs from that in having upright capsules, a very short involucrum, and few, but long branches. DICKS. Fasc. iii. p. 9.

[Cryb y Ddeseil, though rarely with capsules. Mr. GRIFFITH.]

H. Shoots ascending: fruit-stalks lateral: capsules ob- cris'pum. long; beak of the lid bent: leaves oblong, blunt, wrinkled, in 2 rows.

Dicks. h. s.–*E. bot.* 617–*Dill.* 36. 12–*Hall. enum.* 3. 5, *at p.* 109, *hist.* 46. 5, *at* iii. *p.* 56–*Happ.* ii.–*Hypn.* 5–*H. ox.* xv. 5, *row* 3. 10, *p.* 625.

The most elegant of the genus. Grows in dense broad strata. *Shoots* a span long, flat, a little raised. *Leafits* closely tiled, alternate, in 2 rows, spear-shaped, blunt, shining, wrinkled. *Fruits-stalks* ½ inch long, lateral. *Involucrum*, leaves paler. *Capsules* nearly upright, egg-shaped. *Lid* with a long beak. *Veil* long. Weis. From 2 to 12 inches long, crowded and lying one upon another, branches compressed, blunt, undivided, alternate or in pairs. *Leaves* crisp, transversely waved. The whole plant is pale green in winter, yellowish in summer. Dill.

On chalk hills near Gravesend, and on the banks of the Thames out of the tide's way. On St. Vincent's rocks, and on the Welsh mountains. [About Kirkby Lonsdale, Westmoreland. Dr. J. E. Smith. On rocks in Garn Dingle, 3 miles from Denbigh. Mr. Griffith.] P. March, April.

me'dium. H. Shoots creeping: leaves broad, spear-shaped, pointed, tiled but open: capsules cylindrical, fringed.

Dill. 42. 65.

Crowded together. *Leaves* pressed when dry. *Fruit-stalks* less than ½ inch in length. Dill.

The foot of trees in woods in Scotland.

pulchel'lum. H. Shoots crowded, upright: branches somewhat bundled, strap-shaped: fruit-stalks long: capsules upright, somewhat oblique. Dicks. ii. 13.

Dicks. h. s. and fac. 5. 6.

Shoots short, crowded in close tufts. *Branches* nearly equal, expanding. *Leaves* near together, egg-spear-shaped, shining. *Involucrum* short. *Fruit-stalk* as long again as the shoot, rising from its base, upright. *Capsules* inversely egg-shaped. *Fringe* toothed. *Lid* pyramidal. *Veil*, none on the specimens. Dicks.

Shady woods, Scotland.

viticulo'sum. H. Shoots branched, prostrate: leaves oblong, acute, expanding: capsules oblong; lid conical.

Dicks. h. s.–Dill. 39. 43–*H. ox.* xv. 5, *row* 1. 7–*Vaill.* 23. 1–*Pluk.* 47. 4.

Covering the trunks of trees in large patches. *Stems* fibrous, creeping very long, branched. *Branches* upright, when dry cylindrical, and twisted like a rope. *Leafits* nearly triangular, the upper ones largest. *Fruit-stalks* about an inch high, rising from the bosom of the branches, out of small hairy scaly fences. *Capsules* small, shining. *Lid* very short, conical, pointed. *Mouth* fringed when magnified, smooth to the naked eye. Weis.

Fruit-stalks and *capsules* upright. Appears crisp when dry. *Leaves* triangular, keeled, pointed but not hairy. DILL.

On trunks of trees, and sometimes on the ground on the chalk hills between Northfleet and Gravesend. DILL. 307.—[By the north west corner of the bridge at Kirkby Lonsdale; and in Armingdale Wood, near Norwich. Dr. J. E. SMITH.—Earsham, Suffolk. Mr. STONE.] P. March, April.

B. (2) *Branches irregular; leaves irregular; capsules leaning.*

H. Stem elongated, somewhat branched: leaves heart- shaped, concave, finely serrulated, diverging; lid convex, beaked. ruscifo'lium.

Hedw. stirp. iv. 4–*Dill.* 38. 31.

Adhering to stones under water, in broad patches, 1 or 2 inches or more in length, according to the rapidity of the stream. *Branches* upright, cylindrical below, flat above. *Leaves* egg-spear-shaped, closely tiled, 2-rowed, and less compacted upwards. *Fruit-stalks* on the stem between the shoots, and from the bosom of the leaves. *Capsules* short, thick, drooping. *Lid* beaked. *Mouth*, fringe long. WEIS. *Leaves* deep dull green. *Fruit-stalks* $\frac{1}{2}$ an inch high. DILL.

Hypn. riparioides. Hedwig. *H. rutabulum.* ♂ Huds. and Bot. arr. *ed.* ii. In rivulets and waters in Yorkshire. DILL.

The shoots are often incrusted with calcareous earth, which in time it accumulates so as to form stones of 20 or 30 pounds weight. WEIS.

H. Shoots trailing; fruit-stalks lateral: leaves egg-spear- shaped, scored. lutes'cens.

Dicks. h. s.–Hedw. stirp. IV. 16–*Dill.* 42. 60.

Differs from *H. sericeum* in the shoots being longer, more slender and limber; the branches more distant and less crooked, the fruit-stalks longer, the leaves and the involucrum longer; the capsules rather shorter, and bent; the lid also bending. *Fruit-stalks* from the shoot as well as from the branches. DILL. Plant of a pale yellow green.

H. sericeum. γ Huds. *ed.* ii. 506. Chalk Hills between Northfleet and Gravesend, and on trunks of trees near Woding and Beddington, Surry. HUDS.—Gogmagog Hills. RELH. P. Jan.—April.

H. Leaves spear-shaped, scored, hair-pointed: capsules cylindrical, leaning. DICKS. cassu'bicum.

Vaill. 27. 1.

Nerves on the leaves more than three. *Caps.* never upright. Scop.

On trees, in moist shady places.

intrica'tum. H. Shoots creeping; branches short: fruit-stalks lateral: capsules urn-shaped, beak bent: leaves spreading, spear-shaped, taper-pointed.

E. bot. 202–*Vaill.* 28. 2.

Forms a close green mat on the decayed bark of trees in damp woods. *Shoots* several inches in length. *Branches* short, slender. *Veil* slender, cylindrical, whitish. E. bot.

First found by Mr. Teesdale, and since by Dr. Smith, in woods on the south east side the river at Matlock Bath.

undula'tum. H. Shoots branched; branches somewhat winged: leaves waved and folded: fruit-stalks lateral and axillary.

Dicks. h. s.–*Dill.* 36. 11–*H. ox.* xv. 6. 33.

A span long, lying flat. *Leafits* closely tiled, in a double or triple series. Weis. *Fruit-stalks* long, slender, reddish. *Veil* straw-coloured, with a brown spot at the end. *Capsules* oblong. *Lid* spit-pointed. *Mouth* fringed. *Involucrum*, leaves narrow, short, bent back. *Shoot* not always branched; its rib yellowish. *Leaves* tender, pellucid, smooth, shining, pale green, not changing colour when dry. *Involucrum* lateral, and in the angles of the branches, composed of short, narrow reflected scales. *Fruit-stalks* 1½ to 2 inches long. *Capsules* rust-coloured, crooked when ripe. *Lid* pointed. Dill.

Woods, shady places, and moist rocks. On the top of Snowdon. [Rivelston Wood, near Edinburgh. Dr. J. E. Smith.]

P. March—April.

al'bicans. H. Shoot branched, ascending: fruit-stalks lateral: capsules oblong, lid conical, blunt: leaves oblong-spear-shaped, bristle-pointed.

Dicks. h. s.–*Hedw. stirp.* iv. 5–*Vaill.* 26. 9–*Dill.* 42. 63.

Shoots about 2 inches long, scattered, almost upright, but little branched, yellowish green mixed with white. *Leaves* spear-shaped, bristly at the end, everywhere surrounding the stem. *Fruit-stalks* lateral, ½ inch upright, red; but rarely found. *Capsules* small, oval, oblique, rather nodding; yellow red. *Lid* short. *Mouth* fringed. Dicks. Scarcely upright, not crowded together, a little branched, shoots slender, yellowish pale green. *Leaves* slender, pressed to, soft, shining. *Involucrum* hairy. Dill.

In loose sandy soil on heaths, and places thinly clothed with

grass: but seldom with capsules. DILL. 329.—[Bungay Common, Suffolk. Mr. CROWE. Mr. STONE.] May.

H. Branches crooked: leaves egg-shaped, scored, acute, expanding in every direction: lid pointed. stria'tum.

Hedw. stirp. iv. 13–*Dill.* 38. 30–*Vaill.* 27. 1–*H. ox.* xv. 5, *row* 3. 8. *p.* 625.

Slender, creeping, matted together, irregularly branched. *Leaves* small, triangular, pale green. *Fruit-stalks* $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in length. *Capsules* swollen, short, nodding. *Involucrum* slender, scales narrow, ending in hairs. DILL.

Leaves scored. *Fruit-stalks* often twisted, untwisting when moistened and turning the capsule from the right to the left.

Hypn. rutabulum. γ Huds. and Bot. arr. *ed.* ii. Woods and bushes, on the roots and trunks of trees. DILL. P. Jan.

H. Branches bowed back; leaves egg-shaped, spreading: fruit-stalks axillary. tri'quetrum.

Dill. 38. 28–*Vaill.* 28. 9–*Buxb.* iv. 63. 1.

Branches unequal. *Leaves* triangular, pointed. LINN. Spreading to a foot in length, reddish, elastic, rising upwards. Often grows upright. *Branches* frequently bent to the ground, their extremities taking root. *Leaves* broad, triangular, not keeled, tender, pellucid, pale green, pointed. *Involucrum* rigid, oblong, composed of reflected scales, sometimes 2 or 3 together. *Fruit-stalks* seldom more than an inch high. *Capsules* upright, thin; when ripe thicker, leaning, crooked. DILL.

Woods about the roots of trees, and in dry barren pastures. P. Sept.—Jan.

Used to pack glass and earthen ware. WEIS.

H. Shoots branched: capsules oblong: lids conical: leaves egg-spear-shaped, distant, expanding. fluʼitans.

Dill. 38. 33–*Vaill.* 33. 6.

Fruit-stalks fine, red, in some plants very long, in others scarcely an inch long. *Capsules* red, hooked, very short, fringed at the mouth. LINN. Much branched, slender, a foot long or more, either upright or floating. *Leaves* narrow, alternate, those on the stem fewer and broader than those on the branches, soft, pellucid, yellow green. *Capsules* not hitherto found. DILL.

Stagnant waters. Marshy places in Ireland, in a ditch near the road from Oxford to Marston, ditches near Hackney, and elsewhere about London, and in a small pond in a pasture opposite Great Founder's Close, Cambridge.

utab'ulum. **H.** Branches irregular, ascending: leaves tiled, egg-shaped, acute, sharp-pointed: lids conical.

Hedw. stirp. iv. 12–*Buxb.* iv. 62. 2–*Fl. dan.* 824. 2–*H. ox.* xv. 6. *row* 5. 18–*Vaill.* 27. 8–*Dill.* 38. 29, *capsules the best, but the shoots, as Haller remarks, are too round-*
H. ox. xv. 6. 35.

Leaves pellucid. *Mouth* fringed. Weis. *Leaves* triangular, green, shining when dry, not keeled. *Caps.* dark brown, shining. Dill.

Grows much crowded, in patches, and full of fructifications. Mr. Stackhouse. Woods and hedges, on the roots and trunks of trees and shrubs: on the ground in barren places.

P. Sept.—Jan.

Var. 2. Upright, short. Leaves slender.

Marshy places. *Dill. in R. Syn. p.* 83. *n.* 18.

C. (1) *Shoots winged with branches: capsules upright.*

Smith'ii. **H.** Leaves nearly circular, somewhat concave; capsules egg-cylindrical: veil hairy upwards. Dicks. ii. 10.

Dicks. 5. 4.

Deep green. *Shoots* hard, woody, pointed: in the middle, or towards the end bowed in. *Branches* if pressed down recovering their former direction, on the pressure being removed. *Wings* strap-shaped, bowed in and curled at the ends. *Leaves* tiled, open, pressed to at the base. *Involucrum* cylindrical, the leaves egg-spear-shaped, ending in hairs. *Fruit-stalks* numerous, solitary, very short. *Capsules* upright, egg-shaped, nearly cylindrical, reddish brown, shining. *Fringe* obscurely toothed. *Lid* roundish, with a beak a little oblique. *Veil* slanting. Dicks.

Trunks of trees near Barham Downs, Kent. Dr. J. E. Smith.

penna'tum. **H.** Leaves egg-spear-shaped, tiled, pointed, in 2 rows, compressed, waved: involucrum as long as the fruit-stalk.

Dicks. h. s.–Hedw. stirp. iii. 20–*Dicks. fasc.* i. 8.

Differs from H. complanatum in the leaves being transversely waved, and the fruit-stalk not being longer than the involucrum; and from the Fontinalis pennata in the capsule standing out of the involucrum. Dicks.

Neckera pumila. Hedw. Hypn. pumilum, and *H. Dicksoni*, of Gmel. syst. veg. [Trunks of trees in woods between Troutbeck and Ambleside, Westmoreland. Dr. J. E. Smith.]

H. Branches very short: leaves spear-awl-shaped, shining. ni'tens.

Fl. dan. 1123. 2–*Dill.* 39. 37.

Shoots upright, 1 to 3 inches high. *Branches* lateral. *Leaves* closely set. *Fruit-stalks* terminating and axillary. *Capsules* egg-shaped, leaning when ripe. *Lid* short, conical, pointed. *Mouth* entire. WEBER. *Leaves* very narrow, almost hair-like. *Invol.* very long. DILL. *Fruit-stalk* near 2 inches long; capsule rather crooked, which gives it the appearance of leaning.

Turf bogs. Scotland. DICKS. ii. 12.

H. Shoots very long, rather leafless below: capsules egg-shaped, fringed: fruit-stalks lateral, ascending, short. prolix'um.

Dill. 38. 32; *and* 85. 20.

Shoots 12 inches or more in length, upright in stagnant, floating in running water, closely crowded, sending out a few short branches towards the ends. *Leaves* numerous, small, tiled; under ones the largest. *Involucrum* a small bulb, composed of a few short scales. *Fruit-stalks* short. *Capsules* small. DILL.

Alpine rivulets in Scotland. On Ben Glow.

H. Shoots creeping: branches crowded: leaves tiled; awl-shaped. plumo'sum.

Dicks. h. s.–Hedw. stirp. iv. 15–*Dill.* 35. 16.

Shoots about a span long, brownish, with dark rust-coloured wool underneath, by which it adheres closely. *Branches* from each side of the shoot, generally undivided, clothed with very slender soft and shining leaves. *Involucrum* hairy. DILL.

H. sericeum β Huds. 506. Trunks and roots of trees in Enfield Forest, and on brick walls about London. DILL. Jan. Feb.

C. (2) *Shoots winged with branches: capsules leaning.*

H. Shoots proliferous; nearly flat, not shining: fruit-stalks several together: involucrum bristly. prolif'erum.

Curt.–Dill. 35. 14–*Vaill.* 25. 1–*H. ox.* xv. 5, *row* 3. 20–*Tourn.* 326. *c.–Ger.* 1372. 7–*Ger. em.* 1561. 7–*Park.* 1310. 3–*J. B.* iii. 765. 1.

Its structure is very singular; one large *compound shoot* proceeding from the middle or disk of another, and this repeated several times in the same plant. LINN. A span long or more, doubly winged. *Fruit-stalks* an inch long, (or more) from the middle of the shoot, and from the rib of the branches 1 to 3 (4 or 5) in a place. *Involucrum* large, conical, hairy. *Lid* conical, pointed. *Veil* oblique. WEIS. *Capsules* leaning, reddish, thick. *Mouth*, fringe in a double row. *Leaves* so minute as hardly to

be well distinguished by the naked eye. *Caps.* reddish, at first straight, then crooked. The leaves smaller, not shining, the shoots more serpentine, and the bristly involucrum distinguish this from the Hypn. parietinum. DILL. *Hypn. parietinum*, and *Hypn. proliferum* of Gmel. *syst. veg.* are both ths same plant.

Heaths and thick shady woods. P. Dec.—Feb. CURT.

Covers the surface of the earth in the thickest woods through which the sun never shines, and where no other plant can grow. LINN.

parieti'num H. Shoots proliferous, nearly flat, shining: fruit-stalks several together: involucrum scaly.

Vaill. 29. 1–*Dill.* 35. 13–*Buxb.* ii. 1. 2, *and* ii. 2. 1.–*Happ.* 1–*Hypn.* 3–*Vaill.* 29. 1–*Schmid.* 58. 3.

Fruit-stalks 4, 5, or more together, at the base of the branches; about 15 lines long. *Shoot* bent at the places where the branches issue out, so as to be zigzag. Very like the *H. proliferum* in its mode of growth, and in the proliferous shoots sending out other similar shoots, but the leafits are more distinct, less compacted together, of a pale green with a silky gloss. WEIS. *Shoots* lying on the ground, from a span to a foot long, consisting of 3 or 4 parts, shewing the annual increase, and as it grows in length at one end, the other end is converted into roots. *Branches* winged. The new shoot puts forth in the spring not from the end of the old one, but near to its end; is very densely clothed with leaves, and after a time sends out branches. *Fence scales* reflected. DILL. Both in this and in the Hypn. proliferum, the shoots resemble the winged leaves of Ferns.

Woods, heaths and shady places. P. Feb. March.

It is used in Sweden to fill up the chinks in the walls of timber houses.

filic'inum. H. Shoots simply winged: leaves oblong, taper-pointed, reflected, pointing one way: capsules nearly cylindrical; lid convex.

Fl. dan. 1123. 1–*Vaill.* 29. 9–*Dill.* 36. 19.

Fertile shoots trailing, the barren ones upright. *Fruit-stalks* 1 or 2 inches long; from the bosom of the branches. NECK. *Shoots* from 3 to 6 inches, undivided, winged. *Wings* leafy. *Fruit-stalks* from the middle of the shoots, one or more in a place. *Fence* hairy. *Capsules* leaning. *Lid* conical, short, blunt. WEIS. Sometimes branched: always sending out numerous lateral shoots, which are shorter as they grow nearer to the end of the stem. *Leaves* very numerous, pleasant green, narrow, bent back. DILL.

Marshy places, and near springs. [Bungay, Suffolk. Mr. STONE.] P. March. HUDS.—Summer. DILL.

H. Branches near together; bowed back. Crista-castren'sis.

Dicks. h. s.–Vaill. 27. 14–*Dill.* 36. 20.

It very much resembles an ostrich feather from its shining parallel rays, by which, and by its silky hue, it is readily distinguishable. *Fructifications* seldom to be met with. Linn. *Fruit-stalks* $\frac{1}{2}$ inch to 1 inch long; from the base of the branches. Neck. Grows in broad patches, reclining, flat, one plant over another. *Leafits* hooked, very sharp. *Branches* triangular, the ends bent back. Weis. *Branches* crowded, ends reflected. *Leaves* numerous, bent back, yellowish green; downy, crisp. Dill.

Chalk hills, rocks, about the roots of trees in dry woods and stony soils. [Bungay, Suffolk. Mr. Stone.] P. March, April.

C. (3) *Shoots winged with branches: capsules drooping.*

H. Shoots taper-pointed: leaves upright but expanding: capsules oblong, crooked. Dicks. du'bium.

Dill. 36. 21.

Leaves yellow green, smooth, narrow, spit-pointed, upright on the upper, reflected on the lower shoots. *Fruit-stalks* often bent and twisted in a young state; afterwards becoming straight. *Capsule* oblong, crooked when old. *Lid* short. *Involucrum* pyramidal, its scales hair-pointed. Dill.

Wet heaths and marshy places. Febr.

H. Branches somewhat cylindrical, distant, unequal: *leaves* egg-spear-shaped, closely tiled. abie'tinum.

Dill. 35. 17–*Vaill.* 29. 12–*H. ox.* xv. *row* 4. 22. *p.* 626.

Fruit-stalks from the middle of the rib of the shoot, single, purple, straight, as long as the shoot. *Veil* upright; awl-shaped, pale. *Capsule* yellowish red, more bowed back than in any of the rest; edge of the mouth entire, with a short open fringe within. Linn. *Shoots* 2 to 4 inches long, elastic when fresh, brittle when dry. *Wings* limber, alternate below, opposite and shorter above. *Leafits* egg-spear-shaped, scored, ending in hairs, closely tiled. Weis. *Branches* straight. *Leaves* straight, which distinguishes it from the *H. filicinum*. Scop. Grows matted together, half upright, sometimes branched, 3 to 5 inches long. Side shoots awl-shaped, numerous, opposite, surrounded on every side by small dull yellow green leaves. No fructification yet found. Dill.

Mountainous places. On hills near Hinksey, Oxfordshire. Dill.—In shady places, and on Chalk hills about Northfleet. P. March.

prælon'gum. H. Shoots somewhat winged; trailing; fibrous: branches remote: leaves egg-shaped.

Hedw. stirp. iv. 29–*Dill.* 35. 15–*Vaill.* 23. 9–*Buxb.* iv. 63. 3.

Leafits serrated. At first sight distinguishable from all the other Hypnums by its shoots being very long, very closely crowded together, covering the trunks of trees in broad patches and hanging down. *Shoots* trailing, very tender, brittle when dry, a span long, or more, clinging to the trees by means of numerous brown woolly fibres. *Leafits* small triangular, ending in a hooked hair; alternate, in a double row. Weis. From a span to a foot in length; doubly winged. *Leaves* very small, triangular. *Fruit-stalks* an inch long, purple. *Capsules* dull green, brown when ripe; short, nodding. *Veil* pale green, straight. Dill.

Trunks of trees, rotten wood, and wet ground. [Bungay, Suffolk. Mr. Stone.] P. Oct.—Feb.

D. (1) *Leaves bent back: capsules upright.*

rugo'sum. H. Shoots scattered, rather upright: leaves pointing one way, wrinkled at the base: fruit-stalks axillary.

Dicks. h. s.–Dill. 37. 24.

Leaves spear-shaped, narrow, sharply pointed, closely tiled. Pollich. Shoots seldom more than 3 inches long, thick, lying on the ground, crowded together, irregularly branched. *Leaves* exceedingly crowded, dry, crisp, their points in one direction, yellow green, when old or dry quite yellow. The fruit-bearing plants grow a little distant from the others, and have a different appearance. They are thinner, more pointed; the leaves more uniform, and less yellow. *Involucrum* open, scaly, at the origin of the branches. *Fruit-stalks* $\frac{3}{4}$ of an inch high. *Capsules* cylindrical, straight, slender, red when ripe. Dill.

In bogs in Scotland. Near Loch Rannoch. Dickson.

flagella're. H. Shoots creeping: branches upright, rarely divided: leaves spear-shaped, taper-pointed, the ends reflected.

Dill. 39. 42.

Leaves small, smooth, not much pellucid, produces its capsules, in September. Dill.

On stones near rivulets in the Highlands of Scotland.

D. (2) *Leaves bent back: capsules leaning.*

scorpioi'des. H. Branches waved, trailing, hooked: leaves pointing one way, tapering to a point.

Dicks. h. s. Dill. 37. 25.

Branches brown, hooked, and yellow at the ends. LINN. *Shoots* trailing, cylindrical, 1 to 3 inches long. *Branches* rising upwards, thick, bent and thicker at the ends, about 1 inch long. *Leaves* spear-shaped, often ending in hairs, wrinkled at the base. *Fruit-stalks* ½ to 1 inch high. *Capsules* cylindrical, slender, leaning. *Lid* pointed. *Mouth* with a white fringe. WEBER. The barren plants are longer and thicker than the fertile plants, colour dark red, the ends purple and green. The fertile plants are entirely green, except here and there a little purple. DILL.

Turfy bogs and marshes. Near Bishop's Castle, Shropshire, and about Penter, near Bangor. Near Norwich, and in the North of England; and at Corriattachan in Strath Swandie in the Isle of Sky. [Turf pits on Ellingham and Geldestone fens. Mr. STONE. On Snowdon and Cader Idris. Mr. GRIFFITH.]

P. Nov.—April.

H. Branches straggling: leaves spear-shaped, acute, bent back in 5 different directions. squarro'sum.

Fl. dan. 535. 1–*Dill.* 39. 38–*H. ox.* XV. 5, *row* 2. 2–*Fl. dan.* 648. 3.

Often 6 inches long, creeping, rib a beautiful purple, shining through the interstices of the leaves. *Leaves* ending in a sharp point, as fine as a hair. *Fruit-stalks* 1 inch to 1½ high, straight, springing from a cylindrical, scaly and hairy fence. *Capsules* egg-shaped, leaning. *Lid* blunt. *Mouth* wide open, fringe yellow. I have found capsules in July. WEIS. DILL. *Capsules* rarely met with. RAY. *Fruit-stalks* solitary or in pairs. *Lid* not large enough to cover the mouth of the capsule, but joined to it by a kind of groove. Mr. STACKHOUSE.

Moist meadows and pastures. P. Feb.—May.

Var. 2. Smaller. Leaves triangular, open, reflected. DILL.

Vaill. 27. 5–*Dill.* 39. 39.

Not much different from (1) except in the leaves being smaller, paler, closer set, and more bent back. WEIS. The *Capsules* too are smaller, and the lid sharper. DILL.

Wet places.

H. Shoots creeping: branches crowded; upright, on one side the shoot: leaves egg-shaped; pointing one way: capsules nearly upright. palus'tre.

Hedw. stirp. IV. 1–*Dill.* 37. 27.

Branches upright, compressed, from ½ to 1 inch high, numerous. *Leaves* in a double or triple series, sharp, hooked. WEBER. *Shoots* slender, creeping, with few leaves, and those shrivelled.

Branches generally simple, short. *Leaves* dull green, hooked at the end. *Fruit-stalks* from the base of the branches, red, longer than the branches. *Caps.* oblong, a little inclining, brown when ripe. *Lid* larger in diameter than the capsule. *Veil* straight, pale. DILL.

Leskia palustris. Hedw. In wet places. On the banks of the Thames near Battersea. DILL. At the roots of trees and in wet stony places. HUDS. [Water fall at Roslin near Edinburgh. Dr. J. E. SMITH. By the rivulet, Garn dingle. Mr. GRIFFITH.] P. Jan.—April.

lo'reum. H. Shoots creeping: branches waved, upright: leaves pointing one way: capsules roundish egg-shaped.

Dicks. h. s.–Dill. 39. 40–*Vaill.* 25. 2–*H. ox.* XV. 5, *row the last,* 24. *p.* 626–*Buxb.* iv. 64. 1–*Ger.* 1370. 1.

Fruit-stalks from the base of the branches. NECK. Nearly allied to the *H. squarrosum.* Ends of the branches thickest, bent back. WEIS. *Fruit-stalks* more than an inch high, from the stem between the branches upright. *Capsules* egg-shaped, leaning. *Shoots* near a foot long or more, the rib rigid, brittle, surrounded by pale green leaves, those towards the end bent back. DILL.

On the mountains in Crevetenan Ballenahinch, in the county of Down, Ireland; in hilly situations near Glocester. DILL. In the mountainous woods of Breadalbane. Mr. STUART in *Fl. Scot.* [Near Ambleside Westmoreland. Dr. J. E. SMITH.] P. April.

adun'cum. H. Shoots nearly upright; somewhat branched: leaves pointing one way; spear-awl-shaped; curled: branches hooked.

Hedw. iv. 24–*Dill.* 37. 26.

Resembles the *H. cupressiforme,* but the shoots are more straight, less branched; leaves longer, hooked, their ends pointing one way; fruit-stalks twice as long, rising as well from the middle of the shoot as from the bosom of the branches. The shoots are remarkably rigid. *Fruit-stalks* 2 inches long, rising out of a slender, short, scaly involucrum. *Caps.* egg-shaped, distended, leaning. *Lid* conical, short, blunt. WEIS. Plant yellowish or tawny when growing out of the water. RAY. *Involucrum* oblong, slender, scaly. *Veil* straight. Lower leaves less hooked than the upper ones. DILL.

Marshy and watery places, bogs, and wet pastures. [Turf pits on Ellingham and Geldestone fens. Mr. STONE] P. April—Aug.

cupressi-for'me. H. Shoots somewhat winged: leaves pointing one way; hooked; awl-shaped at the end.

Dicks. h. s.–Hedw. stirp. iv. 23–*Fl. dan.* 535–*Dill.* 37. 23–*Vaill.* 27. 13–*Pluk.* 447. 6–*H. ox.* xv. 5, *row* 2. 8.

Fruit-stalks from the base of the branches, and often twice their length. Neck. *Stems* 2 to 4 inches long, creeping, irregular. *Branches* irregular, very leafy. *Leafits* very densely tiled, hooked and hairy at the end. *Fruit-stalks* from the principal stem, an inch long. *Capsules* cylindrical, at first upright, leaning and bent when ripe. *Lid* short, conical, pointed. *Veil*, whilst young, straight, oblong. Weis. *Stems* stratified, forming large and dense patches; 2 or 3 inches long, irregularly branched. *Leaves* small, crowded, soft, ending in hooked points, pleasant green, smooth. Upper branches thick, bent at the ends; lower ones thinner and straighter. The plant has the appearance of crispness, but is not really so. Dill.

Woods at the roots of trees, and on thatch. *R. Syn.* Sr.

P. Feb.—March.

H. Shoots compressed, winged with branches: leaves hooked, taper-pointed: capsules egg-shaped; lid short, conical. compres'sum.

Hedw. stirp. iv. 22–*Dill.* 36. 22.

Resembles the *H. filicinum* in the crisp appearance of its leaves, its winged shoots and greenish yellow colour, but it is much shorter, less branched, its branches more creeping and forming a more acute angle with the stem. *Leafits* hooked, ending in hairs. *Capsules* thick, egg-shaped. Weis. Two or three inches long, tender, compressed. *Leaves* narrow, in two rows, sharp, points bent backwards, pale green, soft, shining. *Fruit-stalks* 1 inch long, reddish. *Capsules* oblong egg-shaped, green, upright, yellow red, and inclining when ripe. Dill.

Hypnum molluscum. Hedwig. Woods on the trunks of trees and on young twigs. In a wood near Tottenham. Dill.

March, April. In Summer; Weis.

E. *Plant shrub-like: branches in bundles.*

H. Shoot upright, naked below, above with bundles of leafy branches: leaves strap-spear-shaped, tiled: capsules nearly cylindrical, upright; beak bent. dendroi'des.

Dill. 40. 48–*Fl. dan.* 823. 2–*H. ox.* xv. 5. *row* 5. 31–*Tourn.* 326–*Vaill.* 26. 6–*Happ.* i. *Hypn.* 1.

Readily distinguished by its stems closely compacted together, its shrub-like appearance, from 2 to 4 inches high, terminated by a bush of branches. *Branches* upright, cylindrical, smooth, pointed at the end. *Leaves* egg-spear-shaped, pointed, flat, closely tiled. Weis. *Fruit-stalks* more than an inch long,

from the base of the branches; upright. *Capsules* slender, upright. *Lid* conical, short. *Veil* slender. DILL. *Fruit-stalks* longer than the shoots. *Veil* covering the whole capsule. *Leaves* a little serrated. LEERS.

Moist woods and shady places about the roots of trees, and in moist pastures. P. Feb. March.

alopecu'rum. H. Shoot upright: branches in bundles; terminating; subdivided: capsules rather drooping.

Dill. 41. 49–*Vaill.* 23. 2, *and* 5–*H. ox.* XV. 5. *row the last.*

Leaves of the stem open. LINN. In its tree-like mode of growth it resembles the *H. dendroides*, but the shoots are longer, the trunk is taller, the branches expand more, and are more frequently branched again; the extremities are not straight, but hanging down, and the leaves expanding. When dry the leaves bend back at the points, but in the *H. dendroides* they lie close pressed to. WEIS *Stem* 4 or 5 inches high, covered with whitish pointed scales. *Leaves* serrated. *Fruit-stalks* shorter than the branches, bent. *Capsules* egg-shaped. *Lid*, beak bent. LEERS. *Stems* light red, rising from a trailing root. *Leaves* broad at the base, tapering to a point, alternate. *Involucrum* scales ending in hairs, compact. DILL.

Moist and shady places at the roots of trees, and by the sides of rivers. P. March, April.

F. (1) *Shoots nearly cylindrical: capsules upright.*

gra'cile. H. Shoots creeping: branches cylindrical; nearly upright: capsules egg-shaped.

Hedw. stirp. iv. 6–*Dill.* 41. 55–*Fl. dan.* 649. 2.

Hangs suspended from the bark of trees in numerous cylindrical pointed branches bending upwards, and somewhat resembling the claw of a bird. *Fruit-stalks* from the base of the branches, ½ an inch high. *Caps.* upright, pointed, ochrey colour when ripe. DILL. *H. ornithopoides.* Huds. *Pterigynandrum gracile.* Hedw. Trunks of trees and rocks. On beech trees in Enfield Chace. On the masses of stone called Grey Wethers, in Wiltshire. P. Feb—April.

attenua'tum. H. Shoots branched: branches bowed in, sometimes tapering, sometimes thickening: leaves egg-shaped, pointing one way: capsules upright, tooth fringed. DICKS. ii. 13.

Hedw. stirp. i. 12–*Dill.* 42. 66.

Fruit-stalks upright, lateral. *Veil* slender, twisting. *Capsules* cylindrical. *Beak* blunt. *Fringe* double, outer row of teeth 16.

Hedwig. Rather thick, much branched, yellow green, tawny when dry. In large patches on the trunks of beeches, particularly on the Northern side. Dill.

Woods on trunks of trees, Scotland.

H. Shoots upright, thread-shaped, somewhat branched: leaves egg-spear-shaped, without a mid-rib, tiled. Dicks. 6. stramin'eum.

Dicks. h. s. and fasc. i. 9.

Shoots nearly upright, strap-shaped, slender, when dry very brittle, 2 inches and more in length, straw-coloured, sometimes simple, or with 1 or 2 branches. *Leaves* convex and concave, glittering, pressed to. *Fruit-stalks* lateral, upright, red, 1 and sometimes 2 inches long, solitary or 2 together. *Capsules* egg-shaped, upright, bulging on one side. *Lid* short, somewhat pointed. Dicks.

In a marshy place on the West side of Hampstead Heath, near London.

H. Shoots creeping: branches and capsules cylindrical: leaves closely tiled, egg-shaped, pointed. Dicks. ii. 12. cylin'dricum.

Dill. 41. 57.

Shoots (on the ground) sometimes branched, soft, shining, pale green or yellowish. *Leaves* narrow, not hairy, pressed to. *Fruit-stalks* reddish, 1-3d of an inch long. *Capsules* upright, slender, cylindrical. *Lids* pointed. Dill.

Woods on the trunks of trees, Scotland.

F. (2) *Shoots nearly cylindrical: capsules leaning.*

H. Shoots branched: leaves pointed, open, distant. ripa'rium.

Dill. 40. 44–*Hedw. stirp.* iv. 3–*Fl. dan.* 649. 1–*Schmid.* 57. 3–*Buxb.* ii. 3. 3.

Stem 4 to 6 inches long. *Shoots* few and irregular, cylindrical if above, winged if below the surface of the water. *Leaves* egg-shaped, closely tiled on the young cylindrical shoots, more distant and spear-shaped on the principal stem, and hairy at the end. *Fruit-stalks* an inch long, upright, lateral. *Capsules* egg-shaped. *Lid* conical, beak short. *Mouth* fringed. *Veil* upright, covering the young capsule. *Involucrum* very short. Weis. When growing out of the water, or where it is often exposed to the air, the leaves are shorter and blunter, surrounding the stem, but when it is always immersed in water they are longer, more pointed, and wing the stems. Dill.

On walls, and moist stony places on the banks of rivers, on

planks and stones about water mills, and in rivers. [Bungay, Suffolk. Mr. Stone.] P. Sept.—April.

mura'le. H. Shoots creeping; branches mostly upright; in one direction: leaves egg-shaped, concave. Dicks.

Hedw. stirp. iv. 30–*Dill.* 41. 52.

About an inch long, branches very short, mostly upright. *Leaves* numerous, dark green, not shining. Dill. *Fruit-stalks* from the base of the branches. Leaves ribless.

Hypn. myosuroides. γ Huds. and Bot. arr. *ed.* ii.

On walls. Dec. Jan.

mol'le. H. Shoots pendent, slender, very much branched: leaves tiled, egg-shaped, acute: capsules roundish. Dicks. ii. 11.

Dicks. 5. 8.

Whole *plant* soft, flaccid, and flexile. *Shoots* bundled, floating, roundish, somewhat zigzag. *Branches* of very unequal lengths, the ends mostly blunted. *Leaves* upright, concave at the base, open at the end, broad-egg-shaped. *Scaly bulb*, leaves spear-shaped, taper-pointed. *Fruit-stalks* few, short, bowed in. *Fringe* with a ring, with many teeth. *Lid* and *Veil* not found. Dicks.

Banks of rivulets in the Highlands of Scotland.

cuspida'tum. H. Shoots spreading, winged with branches, ending in a long point: leaves oblong, taper-pointed: capsules cylindrical; lid conical.

Dicks. h. s.–Dill. 39. 34–*Buxb.* ii. 3. 1 *and* 2.

The sharp rigid points at the ends of the middle and terminating shoots, afford a ready mark of distinction. From 1 to 4 inches high. *Fruit-stalks* 2 or 3 inches long, upright, lateral. *Involucrum* scaly, long. *Capsules* egg-shaped, thick, a little bent; leaning. *Lid* blunt, short, scarlet. *Mouth* fringed. Weis. Pale green, yellowish or reddish when in fruit. *Leaves* alternate, thin, pellucid, shining. Dill.

Bogs, marshes, wet pastures and moist woods. P. Mar.—May.

filifo'lium. H. Shoots spreading; branches numerous, very short: leaves awl-shaped, acute: capsules oblong; lid conical, blunt.

Dill. 42. 62.

Forming a compact interwoven tuft. Much branched; branches slender. *Leaves* very narrow, smooth, resplendent

green, when dry pressed to, standing out when fresh. *Fruit-stalks* $\frac{1}{2}$ inch high, very slender, reddish. *Capsules* slender, at first upright, afterwards leaning a little, and again upright when ripe. *Involucrum* slender, hairy. DILL.

H. filiforme. Huds. and Bot. arr. *ed*. ii. Trunks of trees. P. Feb.

H. Shoots and branches diverging, nearly upright, blunt. illec'ebrum.

Dill. 40. 46–*Vaill.* 25. 7–*Fl. dan.* 706. 1.

Leaves ending in a spit-point; very closely tiled. Pale, shining, tender, like the *H. purum*, but differs in its branches being blunt, thick, short, not winged. NECK. *Involucrum*, leaves ending in hairs. *Fruit-stalks* $\frac{1}{2}$ inch high. *Capsules* egg-shaped, upright; when old leaning a little. *Lid* pointed. *Mouth* fringed. WEBER. *Leaves* roundish, entirely covering the stalks. *Capsules* small, short, upright. RAY. *Branches* cylindrical. *Leaves* very pale green. DILL.

Heaths, shady places, aud moistish pastures. HUDS. P. March, April—Oct.

H. Shoots crowded, thread-shaped, branched: capsules egg-shaped, fringed: involucrum bulb-like. DICKS. ii. 11. filamento'sum.

Dill. 36. 18.

Crowded, compressed, closely interwoven, so that it is hardly possible to extricate a single plant. Shoots and branches cylindrical, not thicker than a strong sewing thread. *Fruit-stalks* purple an inch long. *Capsules* slender, straight, reddish and bent when ripe. *Involucrum* oblong, large, composed of unequal scales. DILL.

Woods in Scotland. [Crib y Ddeseil. Mr. GRIFFITH.]

F. (3) *Shoots nearly cylindrical: capsules drooping.*

H. Shoots winged, spreading, awl-shaped: leaves egg-shaped: blunt: approaching. pu'rum.

Curt. 207–*Fl. dan.* 706. 2–*Dill.* 40. 45–*Vaill.* 28. 3.

Branches bowed. *Leaves* ending in a spit-point. NECK. Readily known by its peculiar sleek habit, by its freedom from dirt, and its long, cylindrical winged scaly shoots. A span long in wet, but shorter in dryer places. *Fruit-stalks* 1 to 2 inches high, from the mid-rib of the shoot and branches; upright, shining. *Involucrum* oblong, scaly. *Capsules* cylindrical, leaning. *Lid* beaked. *Mouth* fringed. WEIS. *Stems* nearly cylindrical, upright or reclining; often branched. *Branches* winged. *Leaves* blunt, thin, soft, smooth, rather shining, when dry crumpled. DILL.

Pastures, meadows, banks, and woods. P. Nov.

Fishermen make use of it to scour their worms.

Var. 2. More slender. Mid-rib of the leaves red.

Dill. 40. 47–*Vaill.* 29. 10–*Neck. meth.* 1. 10–*Buxb.* iv. 64. 1, *the right hand of the upper figures; and* 3.

Longer and more slender than the preceding, branches and leaves more pointed, more shining when dry, more thinly set, and exposing more distinctly the red mid-rib. DILL.

curtipen'-dulum. H. Shoots upright, branched, leafy: leaves oblong-egg-shaped, acute, tiled: capsules egg-shaped; lid tapering to a point.

Dicks. h. s.–Dill. 43. 69.

From 2 to 4 inches or more in length. Wide spreading, much branched, rigid. *Leaves* ending in a sharp hair-like point, closely tiled, broader and more dense at the ends of the shoots, so as to give them a blunt club-like appearance. *Fruit-stalks* hardly $\frac{1}{2}$ inch long, mostly 2 together, upright. *Capsules* cylindrical at first, and upright; when ripe egg-shaped and pendent. *Lid* short, beaked. *Involucrum* rising nearly up a third of the fruit-stalk. WEIS. Recumbent, matted together. *Shoots* thick, rigid, irregularly branched. *Leaves* green, numerous. *Involucrum* long, pointed. *Capsules* yellowish. DILL.

On the trunks of beeches, in woods. On stumps in Enfield Forest, near Southgate, and in Yorkshire. On large stones on the Marlborough Downs, Wiltshire; and on the rocks of Snowdon. DILL. P. Feb.—April.

atro-vi'rens. H. Shoots creeping, branched: leaves egg-spear-shaped, limber: capsules inversely-egg-shaped, fringed, drooping. DICKS. ii. 10.

Dill. 43. 67.

Slender, irregularly branched. *Leaves* very small, loosely disposed, dull green and pellucid when wet, opake and blackish when dry. *Involucrum* pale, slender, fixed near to the origin of the branches. *Fruit-stalks* blackish. *Capsules* small, black. *Lids* deciduous. DILL.

Woods at the roots of trees, Scotland.

G. (1) *Shoots crowded: capsules upright.*

ceric'eum. H. Shoots branched, creeping: leaves oblong, hair-pointed, tiled, capsules cylindrical; lid taper-pointed, bent.

Hedw. stirp. iv. 17–*Dill.* 42. 59–*Curt.* 126–*H. ox.* xv. 5, *row* 4, 25–*Vaill.* 27. 3. *a. b.*–*Gars.* 639.

Grows so firmly to the trunks of trees that it can scarcely be

taken away entire. LINN. *Shoots* long, creeping, crowded, greatly branched. *Branches* short, roundish. *Leaves* slender, very closely tiled, ending in long hairs. *Fruit-stalks* ½ to 1 inch high, lateral, crowded. *Involucrum* short, thick, scaly. *Capsules* long, nearly cylindrical, but thickest at bottom, upright. *Mouth* narrow, *fringe* white. *Lid* beaked. *Veil* pale. WEIS. *Branches* mostly pointing one way. *Leaves* soft, shining. DILL. With 2 or 3 ribs, which distinguish it from the H. *plumosum*.

Leskea sericea. Hedw. On the ground on dry banks, trunks of trees, and walls. P. Sept.—April.

H. Shoots very much branched, awl-shaped, crooked, tapering upwards and downwards. myosu'roides

Hedw. stirp. iv. 8–*Dill.* 41. 50–*H. ox.* xv. 5. 27–*Vaill.* 28. 4.

Stem 2 to 4 inches long; branched towards the end. *Leaves* closely tiled, egg-spear-shaped, hair-pointed. *Involucrum* short, slender, scaly. *Capsules* upright or leaning. WEIS. *Shoots* thin, creeping, sending out thready brown roots. *Branches* numerous, cylindrical, tapering at each end. *Leaves* crowded, egg-shaped, pointed, smooth, shining, pressed to when dry, rather standing out when fresh. *Involucrum* slender; scales straight, longer than the leaves. *Fruit-stalks* reddish, ½ or ¾ of an inch long. *Capsules* cylindrical, upright, tawny when ripe. DILL.

Hypn. myosuroides, Hedw. *H. myosuroides.* β Huds. and Bot. arr. *ed.* ii. At the roots of trees, and on large stones in woods. Jan.—March.

G. (2) *Shoots crowded: capsules leaning.*

H. Plant creeping, very much branched: branches cylindrical: leaves egg-spear-shaped, hair-pointed, upright, tiled: capsules cylindrical. myosuroi'des.

Dill. 41. 51–*H. ox.* xv. 6. *row* 3. 3–*Vaill.* 27. 6.

Pale green. Stem-leaves almost 3-cornered. DILL.

Woods at the roots of trees, and on stones and rocks. [Bungay, Suffolk. Mr. STONE.] P. Jan.—March.

Var. 2. Leaves dark green, shining, hair-pointed.

Dill. 41. 53.

Leaves soft, dark green, shining, ending in hairs, which appear grey and reflected when the plant is dry. DILL.

On old walls, as of Westham Abbey, near Stratford, Essex; and on rocks on Emott pastures, Yorkshire. DILL.

H. Shoots creeping; branches thread-shaped: leaves like bristles: capsules cylindrical, crooked: lid taper-pointed. ser'pens.

Dill. 42. 64–*Vaill.* 28. 2, 6, 7, 8–*H. ox.* xv. 5, *row the last* 21, *p.* 625–*Buxb.* iv. 63. 2.

Shoots on the ground 6 inches, on trees 2 inches long. Neck. *Shoots* abounding with thick set slender fibres forming broad patches, closely adhering to the earth. *Branches* very slender. *Fruit-stalks* numerous, upright. *Capsules* cylindrical, leaning. *Lid* pointed. *Mouth* fringed. Weis. *Branches* numerous, short, generally simple. *Leaves* too small to be distinctly seen by the naked eye; green, not shining. *Involucrum* small, hairy. *Fruit-stalks* an inch high, or more, fine purple. *Capsules* long, straightish. *Veil* upright, broad at the base, silvery, shining. Dill.

On the ground under hedges, on the trunks of trees, especially young ones, on wood, stones, and sometimes on old bones. Dill. On rotten wood, and in wells. Lightf.

P. March, April.

veluti'num. H. Shoot creeping: branches crowded; upright: leaves awl-shaped.

Dill. 42. 61–*Happ.* iii–*Hypn.* 6–*Fl. dan.* 475–*Vaill.* 26. 9.

Leaves hairy at the end. *Fruit-stalks* lateral, an inch long. *Involucrum* scaly, inclosing the thick base of the fruit-stalk. *Capsules* cylindrical, or egg-shaped. *Lid* conical, short. Weis. *Shoots* crowded, interwoven firmly adhering to the earth and the bottom of trees by the rust-coloured woolly fibres. *Stem-leaves* broader than the branch-leaves. *Involucrum* short, hairy. *Lid* blunt. Dill.

At the roots of trees, in woods, and hedges, in shady places and barren pastures. P.

Capsules appearing in autumn, and coming to perfection in Feb. and March.

Var. 2. Smaller, shorter, of a paler green. R. *Syn.*

Shoots seldom more than 3 or 4 lines long. *Leaves* egg-shaped. Neck.

clavella'tum. H. Creeping: branches upright, greatly crowded: capsules bowed; beak bent.

Dill. 85. 17.

Fruit-stalks twice as long as the branches. Neck. *Shoots* 5 to 7 inches long, stiff, growing in dense patches tiled one upon another. *Branches* upright, or trailing, on opposite sides of the shoot, short, rigid, 2 or 3 lines long, and nearly 1 broad; those in the middle the longest. *Leaves* hairless, very entire. *Fruit-stalks* lateral, 4 or 5 lines long, inclosed at the base by an involucrum. *Capsules* a line in length. *Lid* very sharp. *Veil* smooth, a line long, reaching half way. Pollich. Fixed by slender rust-coloured roots to the bark of trees. *Leaves* small, crowded,

Capsules roundish. *Lid*, beak crooked. *Veil* brownish, broad at the base, suddenly tapering to a point. DILL.

On the dead branches and trunks of trees. P. Dec.—Feb.

HEPATICÆ.

JUNGERMAN'NIA. *Fruit-stalk* naked: *capsule* 4-valved: *seeds* roundish.

OBS. Many of the species are beautiful microscopic objects. For a fuller account of the parts of fructification, see Vol. 1. p. 364, and 389.

SUBDIVISONS OF JUNGERMANNIA.

A. Plant unbranched, and without a mid-rib.

B. 1. Leaves winged: fruit-stalks terminating.

2. Leaves winged: fruit-stalks lateral, or at the base.

C. 1. Leaves winged; leafits with appendages: fruit-stalks terminating.

2. Leaves winged; leafits with appendages: fruit-stalks lateral, or at the base.

D. Shoots tiled with leafits.

A. *Plant simple, without a mid-rib.*

J. A little leaf growing upon a large one. epiphylla.

Dicks. h. s.–Hedw. theor. 21. *and* 22, *and* 23–*E. bot.* 771–*Schmid. jung. f.* 1 *to* 6–*Dill.* 74. 41–*Fl. dan.* 359–*Happ. i. jung.* 1–*Mich.* 4. *Marsilea.* 1–*Col. ecphr.* i. 331. 3–*Park.* 1314. 5–*Mull. frid.* 2. 6 *and* 5.

Leaf variously scolloped and curled at the edge, pale green, firmly fixed to the mud by fibres from its under side. WEIS. *Fruit-stalks* hollow, 2 inches high. SCOP. Bears its fruit in the spring, but flowers in autumn, the barren flowers appearing like dots on the older leaves, and the fertile ones in the cylindrical sheaths. *Involucrum* of 1 leaf, irregular, wrinkled. *Germen* globular, smooth, on a very short fruit-stalk, which is ensheathed. Lower part of the involucrum fixed in a kind of groove. *Style* very short. *Filaments* on the germen of no determinate number. Mr. KNAPP. *Leaf* short, roundish, moderately broad; segments blunt, shallow, fine green, pellucid. In winter a dark green head appears upon the middle of the leaf. In spring this head breaks

forth from a valve on the surface of the leaf, circular and open at the top, afterwards cut into 4 shallow segments. Out of this the fruit-st. rises, growing rapidly to the height of $1\frac{1}{2}$ or 2 inches, white, pellucid, supporting a dark green globe which opens into 4 brownish and roundish segments, discharging a yellow brown powder mixed with fibres. This being done, the old leaf dies, and one or more young ones shoot out. DILL.

[Ellingham Fen, near Bungay, Suffolk, near the direction post. Mr. STONE.] P. March, April.

pusil'la. J. Shoot mostly divided into winged clefts: lobes tiled: involucrum plaited.

Dill. 74. 46.

Leaf simple, very short, slightly divided into winged clefts. *Lobes* tiled. *Involucrum* bell-shaped, plaited on one side. *Head* before it expands black. LINN. *Leaf* deeply divided into strap-shaped lobes, which again are sometimes forked. Lobes blunt, thick, flat, ascending. *Fruit-stalks* often in pairs. LEERS. About $\frac{1}{2}$ an inch long. POLLICH. *Caps.* round, black, shining; valves roundish, finely toothed. DILL.

Grows in patches; of a most beautiful light pellucid green. *Fruit-st.* $1\frac{1}{2}$ inch high. Mr. STACKHOUSE. Shady lanes and banks, and wet places on heaths near Woolwich. DILL.—Wray Wood near Castle Howard, Yorkshire. HUDS.

P. March to June—Oct.

furca'ta. J. Shoots strap-shaped; branched; the ends forked and bluntish.

Hedw. theor. 19, *and* 20–*Dill.* 74. 45–*Vaill.* 23. 11–*Mich.* 4. 4.

Plant hardly 1 inch long. SCHOLL. *Leaves* flat, greenish. *Fruit-st.* seldom more than 2 or 3 lines long, *Involucrum* globular. *Caps.* nearly globular, reddish brown. In a young state it is often found amongst Mosses on trees, of a pale yellow. It is then very brittle, and on handling falls into a yellow powder, greasy to the touch. WEIS. Fringed at the edge. Involucrum and Caps. hairy. Both on fruit-bearing and barren plants on the mid rib underneath the leaves, are found hemispherical or kidney-shaped bodies, a little hairy, becoming powdery. LEERS. In stony shady places where it thrives well, it grows in tufts, and the plants support one another nearly upright, but when scattered amongst other Mosses on trees or on the ground it creeps. *Leaves* flat, compressed, very thin, pale green, pellucid with a distinct vein running through the middle, more or less lobed, trifid or bifid at the end; lobes blunt. DILL.

On the ground, on rocks, and in woods on the trunks of trees. DILL.—and wet shady places. HUDS.—[Bungay, Suffolk. Mr. STONE.] P. April.

J. Shoot doubly wing-cleft, flat, indented, open, ending in two unequal lobes. DICKS. ii. 16. sinua'ta.

Dill. 74. 44–*Mich.* 4. 3.

Leaves permanent deep green, thin, pellucid, flat, cut into winged segments. DILL. Seems to be proliferous. *Leaves* lying one upon another, in which way it appears to increase till it has covered a large patch of rock. When first taken from the water it has a strong and to *me* an agreeable scent. I have never found *fructifications*, though I have examined it at different times of the year. I suspect they have never yet been found in England. Mr. WOOD.

At the head of Elm Cragg Well, under Bell Bank, near Bingley, Yorkshire. DILL.—[Mr. WOOD.—Pretty plentifully at the head of a spring in Middleton Wood, 2 miles from Leeds, on rocks and stones entirely under water. Mr. WOOD.]

J. Leaf oblong, indented, slippery. pin'guis.

E. bot. 185–*Schmid.* 35–*Dill.* 74. 42–*Mich.* 4. *Marsilea.* 2–*Pluk.* 42. 2–*Vaill.* 19. 4.

Fertile plant smaller and more jagged, the others growing close together, and supporting each other become upright. DILL. in *R. Syn.* 110. *Fruit-st.* with a sheathing involucrum, white, pellucid, from 1 to 3 inches high. *Caps.* egg-shaped, black, shining, opening with 4 valves. Other leaves of a longer form not bearing caps. are set with green warty substances about the middle. WEIS. *Involucrum* at first inconspicuous, afterwards long, tubular, entire, pale green. *Fruit-st.* white, 1 to 2 inches long. DILL. from the hollow indentures of the leaf. *Involucrum* long, cylindrical.

Marshy places and Bogs. [Bungay, Suffolk. Mr. STONE.]
April.

J. Shoots with doubly winged clefts. multif'ida.

Schmid. 55–*E. bot.* 186–*Dill.* 74. 43.

Leaves pale green; clefts blunt. *Involucrum* at the base of the leaves, and at the edges of the segments; cylindrical. *Fruit-stalk* about an inch long from the base of the leaves. NECK. *Leaves* flat, pellucid, succulent, greasy to the touch, pale yellow green; those without fruit-st. the most deeply divided. Seldom exceeding ½ an inch in length it would with difficulty be found, being mostly covered by other Mosses, did it not grow in quantities together. WEIS. *Fruit-st.* white. *Caps.* dark green, shining. DILL.

Woods and moist shady places. Cane Wood, near Highgate, and Charlton, Kent, DILL.—and about Hampstead. HUDS.
P. April, May.

B. (1) *Leaves winged: fruit-stalk terminating.*

asplenioi'des. J. Leafits egg-shaped; somewhat fringed.

Fl. dan. 1061–*Hedw. theor.* 16. 17. 81. *to* 88–*Dill.* 69. 5–*Mich.* 5. 3. *oo.*

Shoots 3 or 4 inches long; pale green. *Leaves*, upper edge fringed with little teeth, alternate. *Fruit-stalks* terminating, an inch long, rising out of a sheathing involucrum. *Capsules* egg-shaped, purplish black, shining. Weis. Trailing, sometimes branched. *Leaves* pellucid, pale green, without veins. I have never observed any roots. Dill.

Road sides and on trees, in woods and wet shady places; also near springs and rivulets, when it is sweet scented. [Earsham and Sexton Woods, near Bungay, Suffolk. Mr. Stone.]

P. Feb.—April.

Var. 2. Leafits more crowded.

Fl. dan. 1061–*Dill.* 69. 6–*Mich.* 5. 1. *and* 2–*Vaill.* 19. 7–*H. ox.* xv. 6. *row* 2. 42–*Scop.* 62. 1337, *instead of* 1338, *at* ii. 7. 321.

Plant from 1 to 2 inches long. *Fruit-stalks* 12 lines long, terminating. Neck. *Shoots* more branched than in 1, and shorter. *Leafits* smaller and more crowded. Weis.

In the same situations with var. 1.

Var. 3. Leafits not fringed.

This particular variety was found by Mr. Stackhouse growing under the water of the celebrated spring called Holywell.

scala'ris. J. Leafits very entire, egg-shaped, pointing 2 ways: male fruit-stalk terminating.

Dicks. 8. 5–*Dill.* 31. 5–*Schmid. jung. f.* 17. *and* 18.

Shoots creeping and striking root; terminating in powdery globular substances. Scop. Branched or unbranched, forming compact patches of a beautiful shining brownish green, one shoot lying on another. *Leaves* in 2 rows, minute, roundish, blunt, very entire, $\frac{1}{4}$ of a line in diameter. *Globules* terminating, sitting. Pollich. Creeping on the ground, 1 or $1\frac{1}{2}$ inch long. *Leaves* tender, pellucid, pale green, in pairs. Fruit-bearing branches short, the leaves alternate. Capsules or globules small, green, of short duration. Dill. Shoots creeping, tapering each way, with appendages underneath; leafits roundish egg-shaped, sometimes slightly notched at the end: sheathing involucrum below the shoot, cylindrical, hairy, fixed in the earth. *Fruit-stalk* near $1\frac{1}{2}$ inch high. Dicks.

J. trichomanes, Lightf. *Mnium trichomanes*, Linn. *J.*

trichomanis. Dicks. Scop. and Bot. arr. *ed*. ii. Woods, hedges, and wet shady heaths. P. April—Oct.

J. Shoots spear-shaped: leafits very entire. lanceola'ta.

E. bot. 605–*Dill*. 70. 10–*Mich*. 5. 6 *and* 7–*Happ*. i. *jung*. 2.

Grows in large patches. *Shoots* hardly 1 inch long, simple, or divided into 2 or 3 branches. *Leafits* alternate, crowded at the ends of the branches. *Fruit-stalk* near $\frac{1}{2}$ an inch long, white. *Caps*. greenish brown or blackish. Weis. *Shoots* sometimes branched. *Involucrum* slender, pallid, cloven into segments. Dill.

Moist shady banks. Feb. March.

J. Shoots trailing, branched: leafits egg-shaped, with 2 teeth: stipulæ spear-shaped, with 4 teeth. bidenta'ta.

E. bot. 606–*Schmid. jung. f*. 14–*Dill*. 70. 11–*Fl. dan*. 888–*Vaill*. 19. 8–*H. ox*. xv. 6. *row* 2. 47–*Mich*. 5. 12–*Pet*. 13. 4.

Involucrum terminating; obscurely 3-cornered. *Fruit-stalk* whitish, tender, an inch long. Neck. *Shoots* 1 to 3 inches long, generally branched. Weis. *Leafits* with 2 teeth at the end forming a half moon. Scholl. *Leaves* pale green, pellucid, alternate, fixed by a broad base to the rib, pointing upwards. *Fruit-stalks* leafy at the base. *Capsules* black brown. Dill.

Woods and moistish heaths, and shady banks. Oct.—Dec.

Var. 2. Smaller.

Schmid. 64. 1–*Dill*. 70. 12–*Mich*. 5. 13.

Leafits shorter, blunter, and less deeply cut than in the preceding.

Jung. inflata. Huds. and Bot. arr. *ed*. ii. Shady moist places on heaths and in Woods. Nov.—March.

J. Shoots branched: leafits with 5 teeth. quinquedenta'ta.

Dill. 71. 23–*Mich*. 6. 2, *larger than our plants*.

Involucrum with 5 teeth, a line or more in length. Neck. *Shoot* sometimes simple, taking root as it creeps along. *Capsules* appear in autumn; it blossoms in the spring. *Leaves* 4-sided, teeth or scollops from 1 to 6. *Shoots* crowded, 1 to $1\frac{1}{2}$ inch long, in general branching into forks. Weber. Creeping, crowded, sometimes branched. *Leaves* pellucid, numerous, broadest at the base, pleasant green, lower ones ending in 3 sharp teeth, upper ones in 4 or 5. *Fruit-stalk* terminating. *Involucrum* toothed, angular. *Caps*. black. Dill.

Woods in wet shady places. About Tunbridge, and in the

West of Yorkshire. [In the ascent to Ffynnon freck. p. Llanberris. Mr. GRIFFITH.] P. April.

macrorhi'za. J. Shoots upright, branched: leafits alternate, slightly notched; open. DICKS. ii. 16.

Dicks. 5. 10.

Leaves, the uppermost purplish. *Root* large, branched. DICKS.
Higher mountains of Scotland. [Crib y Ddeseil. Mr. GRIFFITH.]

sphœro-ceph'ala. J. Leafits with 2 teeth: fruit-stalks terminating or lateral, supporting a barren globular flower.

Dill. 31. 6.

Small, whitish, creeping, leaves pointing 2 ways. Leafits notched at the end, and the segments sharp-pointed. SCOP. *Roots* extremely slender and numerous from the mid-rib, and fixing the plant firmly to the ground. *Fruit-stalks* short, terminating and lateral. *Capsules* or powdery heads, pale green. *Leafits* tender, pellucid, cloven at the end, opposite. I have seen no other capsules than these powdery heads. DILL.

Mnium fissum. Linn. *Jung. fissa.* Scop. and Lightf. In wet places about Highgate, and on Shooter's Hill near Eltham, and especially in a rivulet running through Oldfall Wood, between Highgate and Muscle Hill. Scotland. LIGHTF.

Feb.—April. DILL.—P. March—Oct. HUDS.

B. (2) *Leaves winged: fruit-stalks lateral, or at the base.*

sphag'ni. J. Shoots taking root, fruit-stalks lateral: leafits roundish, very entire, tiled, pointing one way. DICKS. 6.

Dicks. 1. 10.

Shoots an inch or more in length; sometimes branched, sometimes not, bending in various directions, and here and there putting forth fibrous roots. *Leaves* roundish, brownish yellow, convexo-concave, all pointing one way, though placed in 2 rows, alternately lying on each other. *Caps.* 1 or 2, issuing from the same side of the shoot near the top or the bottom. *Fruit-stalk* pellucid, white, $\frac{1}{4}$ inch high. *Sheath* whitish, oblong, brownish at the top. *Caps.* small, roundish, brown; but rarely seen. Differs from the *J. polyanthos.* LINN. in the leaves being of a brownish yellow, pointing one way, and also in the fibrous roots. DICKS.

Marshy places, frequently adhering to *Sphagnum palustre*, near Croydon, Surrey. May.

J. Fruit-stalks lateral: leafits broadish, lopped, with 3 angulo'sa.
blunt teeth: capsule bell-shaped. DICKS. 7.

Dicks. h. s.–Schmid. 22–*Hedw. theor.* 18. 89 *to* 92–*Mich.* 5. 10–*Dill.* 71. 22. C. D. E.

Shoots simple or branched. *Leaves* flat, green, pellucid, ending in 3 blunt teeth. Distinct from *J. trilobata*, the pinnules of which are eared and the leafits smaller. DICKS.

Moist shady places. In Wales. DILL. Sept.

J. Leafits flat, naked, strap-shaped. viticulo'sa.

Dill. 69. 7–*Vaill. a. b. between f. 7 and f. 2–Mich.* 5. 4.

Shoots 3 inches long; branches 1 or 2 inches. *Leafits* egg-shaped, the edges fringed and bent back, so that they appear convex. *Fruit-stalks* on the mid-rib, mostly towards the lower part of the shoot, and at the origin of the branches; an inch long, or more. *Involucrum* cut into segments. *Caps.* roundish, black, shining. WEIS DILL.

Shady ditch banks, and woods in wet places. About Slingford, Sussex. DILL. P. March, April.

J. Leafits very entire; tiled; convex. polyan'thos.

Dill. 70. 9–*Mich.* 5. 5.

Shoots about 1 inch long, winged. *Leafits* alternate, egg-shaped, with a blunt point. *Fruit-stalk* ½ inch high, from the mid-rib and the origin of the branches. *Caps.* brown red; egg-shaped. WEIS. Short, branched, stiff. *Leafits* roundish, short, thin, pellucid, tiled. *Involucrum* white, short, 4-cleft. In the fig. of Micheli the leaves are ill done, and roots are erroneously added to the flower. DILL.

Woods, moist shady banks, amongst moss, and on the sides of rivulets. Lead Hill, and between Darking and Cold Harbour, Surrey, in marshy places. P. March, April.

J. Fruit-stalks lateral: leafits with 2 teeth. bicuspida'ta.

Schmid. 63–*E. bot.* 281–*Dill.* 70. 13–*Mich.* 6. 17–*Schmid. Jung.*

Fruit-stalks 6 to 8 lines long. *Capsules* oblong, brown. DILL. *Shoots* less branched than in the *J. bidentata*, and more limber, from ½ to 1 inch long. *Involucrum* 2 lines long, at the origin of the branches. WEIS. *Leafits* with 2 teeth at the end, forming an acute angle. SCHOLL.

Shady places and moist woods. P. March, April.

J. Shoots upright, branched: leafits with appendages un- minu'ta.
derneath: leaves roundish. DICKS. ii. 13.

Dill. 69. 2.

Very slender, branched. *Leafits* not distinguishable by the naked eye, alternate, roundish, pellucid, in single rows. *Roots* very fine woolly filaments fixed to the back of the mid-rib. DILL.

Amongst moss in the Highlands of Scotland. [Summit of Carnedd Llewelyn. Mr. GRIFFITH.]

ventrico'sa. J. Fruit-stalks lateral: sheath sphæroidal; leaves cloven. DICKS. ii. 14.

Mich. 5. 15–*Dill.* 70. 14.

Leaves more deeply cloven than represented by Micheli. DICKS.

Woods.

spinulo'sa. J. Shoots upright, branched: leafits inversely egg-shaped; sharply toothed. DICKS. ii. 14.

Dill. 70. 15.

Fructifications not hitherto discovered. DICKS. *Shoots* upright, or reclining, but not creeping; branches numerous. *Leaves* alternate, not closely set, dull green, pellucid, the upper ones smaller, with 2 or 3 teeth at the end; lower ones with more teeth. DILL. Teeth acute, mostly on one side the leafit.

On Snowdon. DILL. On the mountains of Scotland. DICKS. [On Crib y Ddeseil, and Cader Idris. Mr. GRIFFITH.]

pauciflo'ra. J. Shoots creeping, very much branched, thread-shaped: fruit-stalks lateral: leaves bowed in, deeply divided: sheaths conical, remote. DICKS. ii. 15.

Dicks. 5. 9.

Leaves alternate, remote, cloven down to the base; *segments* equal, strap-awl-shaped, bluntish, concave, transparent, the interstices opaque. *Fructifications* solitary, remote. *Sheaths* conical. *Fruit stalks* as long again as the involucrum. Nearly allied to the *J. multiflora*, and at first sight greatly resembling it, but differs from it in the number of its fruit-stalks, &c. DICKS.

Near Croydon, growing on *Sphagnum palustre*. DICKS. Yorkshire. Mr. TEESDALE.

C. (1) *Leaves winged: leafits with appenduges: fruit-stalks terminating.*

undula'ta, J. Shoots doubly winged above: leafits roundish, very entire, waved.

Vaill. 19. 6–*Dill.* 71. 17.

My specimen accords with Vaillant, but not entirely so with Dillenius's. *Leaves* pointing from opposite lines, expanding, near, not at all tiled, but disposed in a double row on each side, alternate, distinct, equal, those underneath not being smaller or united with those above, all slightly waved. LINN. *Leafits* roundish, convex above, concave underneath, connected by a small appendage near the rib, with the leafit above it. *Involucrum* terminating, oblong, green. *Fruit-stalk* white, 1 inch long. *Caps.* roundish. WEIS. DILL.

Shady places. P. March, April.

J. Shoots doubly winged above: leafits fringed. nemoro'sa.

Hedw. theor. 15–*E. bot.* 607–*Dill.* 71. 18–*Mich.* 5. 8.

Leafits broad at the base, and enveloping the mid-rib, so that there appears no interstice between the leafits and the appendages or coloured scales placed above them. WEIS. Plant mostly about 1½ inch long, branched or unbranched. *Leafits* oblong, numerous, green, pellucid. *Involucrum* terminating, broad; at first leaning. DILL.

Woods and moist shady places in Westmoreland.

P. March, April.

J. Shoots doubly winged above: leafits finely scolloped: tiled; circular. resupina'ta.

Dill. 71. 19.

Very rarely flowers. Underneath resembling a step-ladder. *Plant* 2 inches long. *Leafits* (if magnified) appear edged with a double fringe, with appendages on the upper side. NECK. *Stems* forked, or imperfectly winged, lying one on another, rigid, brittle. *Leaves* in 2 rows; entire at the sides, but with 3 or more minute teeth at the end. POLLICH. Grows crowded together; reclining. Barren plants longer than the fertile ones. *Leaves* roundish, appendages standing out, so that the plant has a crisped or curled appearance. *Involucrum* short, distended, toothed. *Fruit-stalks* near an inch high, white, on short shoots near the base of the plant. DILL.

In clefts of rocks, and on turfy heaths. P. April.

J. Doubly winged above: leafits strap-shaped; bowed back. al'bicans.

Dill. 71. 20–*Vaill.* 19. 5.

Shoots 1 to 2 inches long, not creeping, but reclining. WEIS. Forming dense patches, one shoot lying on another. *Leafits* 2-rowed, ⅕ a line long, and ¼ broad, very entire; ending in a blunt point. Besides these larger leaves, there is another set only half the size on the upper side of the mid-rib, 1 at the

base of each larger leaf. *Involucrum* cylindrical, white, terminating. Barren stems reddish at the ends, and containing minute greenish globules filled with a powder. POLLICH. Crowded together, simple or branched; whitish when dry. DILL.

Woods and wet shady places. P. March, April.

cochleariformis. J. Somewhat cylindrical, rather upright: leafits concave, roundish.

Dill. 69. 1—*Mich* 5. 16, *but more evidently fringed than in our plants.*

Leafits pointing from 2 opposite lines, nearly egg-shaped, transparent, smooth, embracing the stem, pointed, each furnished with a very small earlike appendage. I have never seen any other than male plants. LINN. Stems hollow, reddish. SCOP. *Shoots* creeping, strap-shaped, the ends rising upwards. *Leafits* about a line in diameter, flat. POLLICH. Varies greatly in appearance. The young plants in wet places crowded, upright. *Leaves* very small, roundish, nearly flat, pellucid, alternate, without appendages. When older, the leaves are larger, more closely set, convexo-concave, with scaly appendages at the base, resembling the leaves in shape. In some plants when fully grown the leaves are roundish; in others spoon-shaped; and in another variety gathered on the banks of mountain lakes, I have found the leaves green, pellucid, not crowded, almost embracing the stem. *Shoots* sometimes branched, from 1 inch to a foot long when growing in running water. Have not found it in flower. DILL. Have frequently found it with fertile heads. HUDS. I have found the capsule filled with ripe seeds, but closely inveloped by the leaves at the extremity of the plant, and probably never rising above them.

Since writing the above I have received a specimen from Mr. Griffith in fruit, the fruit-stalk more than an inch long. He found it for the first time in this state, last summer, when the rills were dry or nearly so, and thence concludes that it only flowers in very dry seasons. Possibly the very tender and delicate fruit-stalk may be destroyed in rainy seasons.

Jung. purpurea. Scop. Lightf and Bot. arr. *ed.* ii. *Mnium Jungermannia.* LINN. Bogs, rivulets, and cascades in mountainous situations, and in ditches and turfy heaths. On Cader Idris, Snowdon, and Glyder. DILL. [In moist peat earth on a mountain called Cowsand, and on the sides of hills in the Forest of Dartmoor, Devonshire. Mr. NEWBERRY. In all the rills near Snowdon. Mr. GRIFFITH.] P. March—Aug.

Var. β. Leafits very entire.

Smaller than the preceding, upright, green, not purple. Seems to be the variety mentioned by Dill. as growing in bogs. Specimens from J. W. GRIFFITH, Esq.

C. (2) *Leaves winged: leafits with appendages: fruit-stalks lateral, or at the base.*

J. Shoots creeping, branched: leafits egg-shaped, alter- ova'ta.
nate, with appendages underneath: sheathing involucrum inversely egg-shaped. Dicks. iii. 11.

Dicks. 8. 6.

Fruit-stalks terminating and lateral. *Involucrum* ragged at the top. Dicks.

On barren heaths.

J. Shoots doubly winged underneath; leafits squarish, triloba'ta.
slightly 3-lobed.

Dill. 71. 22. A. B.

About 1 inch long, trailing, branches distant. *Leafits* with 3 to 5 shallow clefts at the end. *Involucrum* about 2 lines long, terminating. *Fruit-stalks* very short. Weis. Sometimes branched, creeping. *Leaves* flat, green, pellucid, with three blunt teeth at the end. I have not found it in flower. Dill.

Wales. Dill. On Crib y Ddeseil near Llanberris. Huds.

P. March, April.

J. Shoots doubly compound: fruit-stalks lateral: leafits rep'tans.
4-cornered, snipt towards the end: stipulæ 4-cleft.

E. bot. 608–*Schmid.* 68–*Dill.* 71. 24–*Schmid. jung. f.* 8. 13.

Fruit-stalk from the base. *Caps.* blackish, shining. Dill. *Appendages* underneath the leafits. Neck. Tender, creeping, irregularly branched, limber, about 1 inch long. *Leafits* very minute, ending in 3 or 4 little teeth. *Involucrum* 3-sided, whitish, toothed. *Fruit-stalk* white, shining. *Caps.* oblong-egg-shaped. Weis. Dill.

Moist shady places. P. Dec. April.

J. Shoots creeping, branched: leafits alternate, in pairs, multi'flora.
bristle-shaped, equal. Linn. Leaf simply winged, flowering at the base. Huds. 510.

Dill. 69. 4.

Shoots thread-shaped, ½ to 1 inch long. *Leafits* short. Weber. *Involucrum* central, numerous, crowded, white, 4-cleft. *Fruit-stalk* slender, white, long. *Caps.* large, reddish brown. Dill.

Shooter's Hill, near London. Dill. March. Huds.

D. *Shoots tiled with leafits.*

complana'ta. J. Shoots creeping: leafits doubly tiled; with little scales underneath: branches of an equal breadth throughout.

Fl. dan. 1062–*Curt.*–*Dill.* 72. 26–*Mich.* 5. 21.

Leafits circular. *Fruit-stalks* terminating: very short. NECK. From 1 to 2 inches long, flat, irregularly branched, adhering close to the bark of trees in broad patches; soft to the touch and flaccid when wet. *Fruit-stalk* hardly a line long, rising from the origin of the branches as well as from their extremities, out of a scaly involucrum, which is lopped at the end. *Caps.* small, black, of short duration WEIS. DILL. Without visible roots. Plant pale or yellowish green, tender, but hardly pellucid. *Fruit-stalks* solitary or in pairs. DILL.

Trunks of trees, in hedges and thickets, flourishing most in a wet situation. P. Jan.—April.

dilata'ta. J. Shoots creeping: leafits doubly tiled; with little scales underneath: branches broader towards the end.

Dill. 72. 27–*Vaill.* 19. 10–*Mich.* 6. 6–*Neck. meth.* 1. 3, *at p.* 273.

Leafits circular, in a double row. NECK. convex, smaller, and *shoots* narrower than in the *J. complanata*. *Involucrum* terminating the branches, 3-cornered. NECK. colour dark green, or reddish. *Fruit-stalk* 1 line long. WEIS. DILL. *Shoots* strap-shaped, lying on one another, forming dense roundish patches. *Branches* distant, winged. *Involucrum* mostly terminating, ½ a line long. *Fruit-stalk* very short. *Caps.* minute, globular. POLLICH.

Trunks of trees, closely adhering to the bark.

P. Mar.—Apr.

tamarisci-fo'lia. J. Shoots doubly compound: fruit-stalks terminating: leafits roundish, with appendages underneath: stipulæ egg-shaped, notched.

Schmid. 67–*Dill.* 72. 31–*Mich.* 6. 5–*Vaill.* 23. 10.

Greatly resembles J. *dilatata*. NECK. but the shoots are much longer, crowded and lying one upon another, more slender, more branched, branches of a uniform breadth, blunt at the ends, not closely attached to the tree on which it grows, but rather hanging down. The mid-rib is more exposed to view, and on the under side appears jointed, and covered with small scales cloven at the end. *Fruit-stalk* terminating, very short. *Caps.* brown

yellow. Weis. Dill. *Leafits* circular, very entire. *Caps.* very minute. Pollich.

Trunks of trees and rock. P. Feb. March.

J. Shoots creeping, branched: fruit-stalks terminating: leaves tiled, concave, notched at the end; sheathing involucrum inversely egg-shaped. Dicks. iii. 11. excí'sa.

Dicks. 8. 7.

Shoots cylindrical, closely tiled with leaves. *Involucrum* toothed at the top. Dicks.

Moist shady woods.

J. Shoots trailing; tiled underneath: leafits heart-shaped, acute. platyphyl'la.

E. bot. 798–*Vaill.* 19. 9–*Dill.* 72. 32–*Mich.* 6. 3 *and* 4–*H. ox.* xv. 6. *row* 2. 44–*Happ.* iii. *Jungermannia.*

Shoots very much branched. Neck. *Branches* spreading. Scholl. About a finger's length, growing in close patches: doubly winged. *Leafits* egg-spear-shaped, tiled in a double row, with appendages underneath. Weis. *Fruit-stalk* short, lateral and terminating. *Involucrum* blunt, compressed, about 1 line in height. *Capsules* minute, upright, smooth, shining, yellowish. Pollich. Grows in large tufts on walls and trunks of trees one layer upon another, fixed only by the ends, irregularly branched. *Leaves* crowded, tiled, pellucid, thin, dark green, the edges and the ends turned down. Dill.

On trunks of trees, and on walls. [Old walls, Bungay. Suffolk. Mr. Stone.] P. March, April.

Var. 2. Leaves shorter and rounder. Hall. *n.* 1872. Lightf. 785.

Dill. 72. 33–*Mich.* 6. 1.

Leaves heart-shaped, rounder than in the preceding. Midrib entirely covered underneath by scales. *Branches* at right angles to the shoot. Have not seen it in flower. Dill.

Trunks of trees. Dill.

J. Shoots creeping, downy above: leaves entire, very ciliated, downy. Ehrhart. Dicks. ii. 14. ciliá'ris,

Dill. 73. 35.

Primary branches alternate, secondary ones alternate likewise, but so closely set as to appear nearly opposite; larger and more numerous in the barren than in the fertile plants. *Leaves* pale green, woolly, extremely crowded, and very minute. *Involucrum* in the angles of the branches, long, woolly, straw-coloured. *Fruit-stalk* white, pellucid. *Caps.* oblong, black. Dill.

Jung. Tomentella. Dicks. Moist woods and heaths, and wet mossy places near rivulets in Yorkshire, Cumberland, and Westmoreland; in a small current of water which runs through Oldfall Wood between Highgate and Muzzle Hill, about Chichester, Sussex, and Darking, Surry. *R. Syn.* and Dill. In the Highland mountains near Aberfeldy. Dicks. [On a dry sandy bank on Brome Heath near Bungay, Suffolk. Mr. Stone.]
P. March, April.

ja'ria. J. Shoots nearly upright; tiled; pointing 2 ways: leafits deeply divided.

Dill. 73. 36–*Mich.* 5. 2.

Shoots short, stiff, brittle; frequently with green or yellowish globules at the end. *Fruit-stalk* white, shining, 5 lines long, terminating. *Involucrum* egg-shaped, with 4 teeth. *Caps.* globular, black and shining. Pollich. At first creeping, undivided, winged with leaves; when older, rising up, somewhat branched, the leaves surrounding the branches. Dill.
Woods and heaths in moist shady places. P. March, Apr.

pulcher'rima. J. Shoots creeping: leafits doubly tiled; appendages underneath, fringed.

Dill. 69. 3.

Branches alternate, convex above, tiled with a double row of scales, and tiled with appendages underneath. *Leafits* and *appendages* fringed, with the fringe bent back, whence its rough appearance; *upper leaves* often cloven. Linn. *Shoots* the length of a finger, winged and branched, the branches alternate. *Leafits* very hairy. *Fruit-stalk* from the forks of the branches, thick, white, pellucid, 1 to 2 inches long. *Involucrum* hairy, long, straw-coloured. *Caps.* dark purple. Weis. *Leaves* sometimes entire, sometimes cloven at the end, alternate, elegantly fringed with hairs at the edges and at the ends, pellucid when plunged in water. It grows in tufts, upright; the ends crooked: seldom found in flower. Dill.
Jung. ciliaris. Sp. pl. On heaths in England and Scotland. Dicks. [Sides of Lochain y Gair. Mr. Brown.] P. March.

adun'ca. J. Shoots thread-shaped, bent at the ends: leaves expanding, pointing one way: fruit-stalks terminating, short. Dicks. iii. 12.

Dicks. 8. 8.

Leaves nerveless, cloven, points acute; 3 together, or rather pointing in 3 directions. Mr. Griffith. *Shoots* trailing, branched. *Leaves* tiled, but standing open; spear-strap-shaped, chan-

neled, the point a little turned back. *Fruit-stalk* short, crooked. Sheathing involucrum short, roundish.

On shaded banks in the Highlands of Scotland. DICKS.

J. Shoots cylindrical, upright: leafits tiled on every side: flowers on fruit-stalks. julacea.

Fl. dan. 1002.?–*Dill.* 73. 38.

Brittle. *Fruit-stalk* terminating. NECK. *Shoots* slender, cylindrical, silky, from ½ to 1 inch high; sometimes forked. *Leaves* so closely compressed as hardly to be observable, which distinguishes it from every other species. WEBER. Grows in very dense tufts; shoots and branches cylindrical, and silky when fresh. Dull greyish green, and brittle when dry. *Fructifications* rare. *Capsules* small, red brown. *Fruit-stalk* short, white, rising out of a toothed involucrum. DILL. Scales of the involucrum cloven, membranaceous. *Leaves* when magnified cloven, not unlike those of Jung. curvifolia. Mr. GRIFFITH.

Wet rocks and by the side of rivulets on Cader Idris, Glyder and Snowdon, and the Highland mountains. [On rocks on the sides and tops of hills in Dartmoor, Devonshire. Mr. NEWBERRY] P. Sept. Oct.

J. Shoots cylindrical, somewhat compressed, closely tiled, compact: leaves convex and concave, smooth: flowers on fruit-stalks. LIGHTF. 786. concinna'ta.

Dill. 73. 38, *J. julacea is spoken of by Lightf. as the best representation of it.*

Grows matted in tufts, reddish brown above, pale green below. *Stalks* ¼ of an inch high, very slender, brittle when dry, closely tiled with leaves, thickest at the ends. *Leaves* undistinguishable by the naked eye, smooth, membranaceous at the edge, always pressed to. *Fruit-stalks* terminating, short. *Capsules* brown. LIGHTF. *Shoots* compressed, but obscurely 4-cornered. *Scales* of the involucrum, entire, rounded, which distinguishes it from J. julacea. Mr. GRIFFITH.

Is it not a variety of *J. julacea?* HUDS. 651.

Rocks on the Highland mountains frequent. [On Snowdon. Mr. GRIFFITH.] Sept.—Oct.

J. Shoots cylindrical: leafits awl-shaped, pointing one rupestris. way.

Dicks. h. s.–Dill. 73. 40.

The whole *plant* very short, being about one third of the length of a pin, blackish, upright, seldom branched. LINN. *Shoots* branched, dark green. *Leafits* bent back. *Involucrum* cylindrical, not tiled as in the J. *alpina*. WEBER. Grows densely

crowded together, short, naked below. *Leaves* very slender, reflected, dark green, blackish when dry, pointing one way. *Involucrum* very minute, terminating, reddish, not scaly. *Fruit-stalk* very short. *Caps.* very small. DILL.

On moist rocks on Snowdon and Glyder, Caernarvonshire; the north of England, and the Highland mountains. [Plentifully upon rocks on the sides and tops of hills in Dartmoor, Devonsh. Mr. NEWBERRY.] P. March—Oct.

tricophyl'la. J. Shoots cylindrical: leafits hair-like, equal.

Schmid. 42. 1 *to* 23–*Dill.* 73. 37.

Shoots only a few lines in length, closely surrounded by very slender leafits, of a pale yellow green. *Fruit-stalk* terminating. *Involucrum* long, cylindrical, cloven. WEIS. When magnified the leafits appear divided quite down to the base into 3 or 4 awl-shaped segments, composed of globular joints. *Fruit-stalk* $\frac{1}{2}$ inch long. *Caps.* black. LEERS. *Leaves* pale green, extremely slender. *Branches* numerous, irregular. DILL.

Turfy heaths near North Brierly, Yorkshire. RICHARDSON in *Fl. Ang.* 516. P. April.

alpi'na. J. Shoots cylindrical: leafits egg-shaped, expanding: involucrum tiled.

Dicks. h. s.–Fl. dan. 1002. 1–*Dill.* 73. 39.

Shoots $\frac{1}{2}$ to 1 inch high, crowded together in tufts, branching into short forks. *Involucrum* terminating. *Fruit-stalk* seldom found; very short. WEBER. One to 2 inches long; cylindrical, not brittle. *Involucrum* scaly, light red, resembling the bud of the beech tree. *Caps.* dark red. DILL.

Wet rocks on Snowdon and Glyder, Caernarvonshire, and bogs on Cader Idris. DILL. And on the mountains of the north of England. HUDS. And of the Highlands. LIGHTF. [On the top of Glyder; and Carnedd Llewelyn. GRIFFITH.] P. April—Oct.

curvifo'lia. J. Shoots creeping, branched, cylindrical: leaves tiled, roundish, taper-pointed, cloven, the segments hooked. DICKS. ii. 15.

Dicks. 5. 7.

The points of the leaves next to the involucrum upright. DICKS.

Highlands of Scotland. [Many places in the ascent to Crib y Ddeseil from Llanberris. On the summit of Carnedd Llewelyn also near Llyn Llumbren, Denbighshire. Mr. GRIFFITH.]

J. Shoots creeping, doubly winged above: fruit-stalk from the middle; sheath cylindrical: leaves rounded. DICKS. ii. 15. cine'rea.

Mich. 6. 18–*Dill.* 72. 28.

Grows creeping upon other mosses. *Shoots* short. *Leaves* round, grey, very small, tiled. If immersed in water and magnified, other secondary leafits may be found underneath these. DILL.

Woods. Bagley Wood, near Oxford. DILL.

J. Shoot very short, unbranched: leaves tiled, circular, nearly opposite: fruit-stalk very long. pu'mila.

PLATE XVIII. f. 4.

Grows matted together. *Shoot* simple, about 1-8th of an inch high. *Leafits* 6 to 8 circular, entire, tiled, nearly opposite. *Sheath* toothed. *Fruit-stalk* terminating, $\frac{1}{4}$ of an inch long, or more.

Sent by J. Wynne Griffith, Esq. who first discovered it on Cwm Idwel.

TARGIO'NIA. *Calyx* 2 valves, compressed, containing at bottom a *capsule*, nearly globular, many-seeded. *See* vol. I. p. 390.

T. Fructifications solitary: calyx open. DICKS. hypophyl'la.

E. bot. 287–*Mich.* 3, *Targionia*–*Dill.* 78. 9–*Buxb.* 1. 61. 4–*Col. ecphr.* 1. *p.* 331. *f.* 333.

Not larger than the little finger nail. Green, not pellucid: rough with white rising dots. *Leaf* heart-spear-shaped at first green, afterwards dark purple, blackish underneath. *Fructification* at the end, on the under side, the size of a vetch. *Calyx* black; opening, containing the fruit covered with a yellowish skin, and filled with a yellowish pulp which rubs to powder between the fingers, and stains them. COLUMN. *ecphr.*

Heaths and sides of ditches near Dawlish, Devonshire.

P. March—May.

T. Fructifications crowded together: calyxes perforated at the end. DICKS. 8. sphærocar'pus.

E. bot. 299–*Mich.* 3. *Sphærocarpos*–*Dill.* 78. 17.

Calyx reticulated like the leaf of a Jungermannia. *Capsules* sitting; brownish when ripe. DICKS. 8. The thick tops of this plant have much the appearance of some of the smaller Mosses, and have, doubtless, on that account been overlooked, but they

have a glaucous hue which instantly announces them to the eye accustomed to observe them. Mr. Woodward.

Sphærocarpos terrestris. E. bot. [Cloverfields, Heyden and Norwich. Mr. Bryant. Very common on our cloverfields in autumn, on sandy loams along with Riccia glauca, the first year of the clover. Mr. Woodw.]

MARCHANTIA. Male: *Calyx* salver-shaped: *anthers* numerous, imbedded in its disk.

Fem. *Calyx* target-shaped, flowering on the under side: *capsules* opening at the top: *seeds* fixed to elastic fibres.

Obs. For a more particular account of the parts of fructification, see vol. I. p. 366, and 388.

polymor'pha. M. Leaf bluntly lobed: calyx of the female flowers mostly 10-cleft.

Schmid. 29. 1 *to* 30–*Hedw. theor.* 24. 127 *to* 131, *fructification–E. bot.* 210–*Dill.* 76. 6. E. F–*Mich.* 1. 1 *and* 3–*Lon.* i. 219. 2–*Fuchs.* 473, (*misprinted* 476) *Trag.* 523–*Matth.* 1038–*Lob. obs.* 646. 1. *ic.* ii. 246. 1–*Dod.* 473. 2–*Ger. em.* 1565. 3–*Ger.* 1376–*Matth. a.* C. B. 732–*Gars.* 300.

A yellowish substance resembling a lock of wool proceeds from the capsules, appearing to move within them whilst the seed is falling out. Linn. From 3 to 5 inches long, 1 broad, and irregularly lobed; dark green, shining. *Fruit-stalks* in the angles of the lobes, 1 to 3 inches high. *Caps.* greenish, dividing into 8 or 10 segments. On the upper surface we here and there observe certain glass-shaped conical cups, on short pedicles, with a wide and scolloped margin. Wets. which inclose about 4 little bodies, very finely serrated at the edges. Pollich. In figure somewhat resembling an oak leaf; surface reticulated. Dill.

In wet places both shady and open. On wet shady walks, and on the sides of wells and springs. P. June—Aug.

Var. 2. Plant smaller; not shining.

Dill. 77. 7–*Mich.* 1. 2–*Lob. obs. upper right hand fig.*–*Lob. ic.* 246–*J. B.* iii. 758. 2.

Leaves smaller and shorter than in 1; fine green, not shining, not reticulated; densely compacted one upon another. Dill.

On the north side of walls, and stones, and in shady areas behind houses. Dill. July, Aug.

Var. 2. Calyx with 8 clefts.

Mich. 1. 5.

M. Female calyx with 4 divisions; segments tubular. crucia'ta.

Dill. 75. 5–*Mich.* 4, *Lunaria–Buxb.* i. 62. 2.

Crowded in its growth, sometimes branched, new leaves proceeding from the ends of the old ones, from ½ to 1 inch long, pleasant green, not pellucid, not veined. *Calyx* with 4, and sometimes 5 divisions. DILL. *Fruit-stalk* white, tender, brittle; 1 to 2 inches high. Mr. STACKHOUSE.

Shady courts and garden walks. P. June—Oct.

M. Leaf scolloped: female calyx 5-cleft; hemispherical. hemisphæ'rica.

E. bot. 503–*Schmid.* 34–*Dill.* 75. 2–*Mich.* 2. 2–*Fl. dan.* 762–*Buxb.* ii. 5. 1.

Head hemispherical, with 5 globules underneath. *Globules* bursting, and pouring out seeds. LINN. *Leaf* from ½ to 1½ inch long, concave, edge waved and scolloped; at first simple, cloven when older, and a young one issuing from the end. *Fruit-stalks* an inch high, brownish, naked. DILL.

Sides of rivers and wet ditches, and wet rocks.

P. April, May.

M. Leaf forked, indented: female calyx somewhat egg- co'nica. shaped, with about 5 cells underneath.

E. bot. 504–*Schmid.* 31–*Hedw. theor.* 25, 134 *to* 136–*Mich.* 2. 1–*Dill.* 75. 1–*Vaill,* 33. 8–*Fl. dan.* 274–*Col. ecphr.* 331. 1–*Park.* 1314. 4.

Leaves pleasant pale green, slippery to the touch, creeping on the ground, dotted on the surface, producing new leaves from the ends of the old ones. DILL. *Male flowers* on the leaf, resembling warts. LINN. *Fruit-stalks* 3 or 4 inches high, transparent, very tender. *Common calyx,* 5 cells bursting at the base, often varying in number from some proving abortive. *Seeds* when ripe hanging out attached to threads, having the appearance of the woolly substance which contains the seeds of the Lycoperdons. Mr. WOODW. *Leaves* in large clusters, indented, blunt, green, with several white tubercles.

On the ground on the banks of brooks in shady places, and sometimes on rocks. DILL. [Very common, but I have only found it in fruit in one place on the shady banks of a ditch at Ditchingham, Norfolk, where I have observed it for some years. Mr. WOODW. In a wet ditch near Belsey Bridge, Ditchingham. Mr. STONE. Road from Kingshill to Cam, Gloucestershire, in fruit, Mr. BAKER.] P. March, April.

androg'yna. M. Leaf forked, segments strap-shaped: female calyx entire, hemispherical.

Dicks. h. s.–Dill. 75. 3. A. C.–*Mich.* 2. 3–*Dill.* 75. 3. B.

Shoots strap-shaped, forked, dotted: often notched at the end; mid-rib blackish. WEBER. *Fruit-stalk* terminating, ½ to 1 inch high. Plant green, strap-shaped, smooth, flat, in forked divisions. DILL.

Under wet rocks on the mountains of Scotland. DICKS. ii. 17.

BLA'SIA. Male: solitary, imbedded in the substance of the leaf.

Fem. *Capsule* egg-shaped, 1-celled, crowned with a tube through which the seeds escape.

OBS. For further particulars of the fructification, see Vol. I. p. 368, and 390.

pusil'la. B.

Schmid. Blas.–Hedw. theor. 27. 156 *to* 164–*Dill.* 31. 7–*Mich.* 7, *Blasia–Fl. dan.* 45.

Seeds when ripe flowing out of a cup-like cylindrical vessel, so small that their figure is not discernible to the naked eye. LINN. *suec. n.* 1053. *Leaves* in a circle, from 1 to 2 inches in diameter, deep purple at the base, green at the edges, jagged. Grows in a circular form in shady places. *Leaves* thin, green, pellucid, with whitish veins towards the base, waved at the edge, cloven at the ends. *Fruit-stalk* 1-8th of an inch high, several rising in succession from near the ends of the leaves. DILL.

On the sides of ditches and rivers in a sandy soil. HUDS. At the breaking of Medlock River Bank at Feasington Wood between Garret and Knotmill, about a mile from Manchester. HARRISON *in Dill.* 238. Near Halifax. BOLTON. On Hounslow Heath. HUDS. P. Aug.—Nov.

RIC'CIA. *Capsules* sitting, globular, 1-celled, growing at the apex of the leaf, and containing from 20 to 30 brown or white seeds. See vol. I. p. 368, and 391.

na'tans. R. Leaves inversely heart-shaped; fringed.

E. bot. 252–*Dill.* 78. 18.

The edges of the leaves are not really fringed, but assume that appearance in consequence of their sending out fibrous roots. WEBER. About ½ an inch long. *Fringe* sometimes white. SCHOLL. *Leaves* sometimes only inversely egg-shaped, and

without any notch at the end; entire at the edge, bright green. WEBER. Very nearly allied to Targionia *hypophylla*. HUDS.

Pools about Hadley, Suffolk. BUDDLE *in Dill.* 537. [Sawston Moor, Cambridgeshire. Mr. RELHAN.] A. Aug.—Oct.

R. Leaves smooth; deeply divided: acute. min'ima.

Dill. 78. 11–*Mich.* 57. 6, *magnified–Schmid.* 45. 3, *ends of the segments blunt.*

Shoots hardly a line in breadth, generally forked, entire and pointed, or else notched at the end. In the substance, and towards the base of the leaf, in the month of October we may observe greenish globules, changing to brown and then to black. WEBER.

On Black Heath near Greenwich. DILL. In places that have been overflowed. HUDS. A. Nov. Dec.

R. Leaves smooth, channelled, 2-lobed, blunt. glau'ca.

Schmid. 44. 1–*Hedw. theor.* 29. 165 *to* 174–*Vaill.* 19. 1–*Fl. dan.* 898. 1–*Mich.* 57. 4–*Dill.* 78. 10–*Buxb.* ii. 5. 5.

I have frequently observed black spots immersed in the substance of the leaves, which are what Micheli has described as capsules full of seeds, and which has been since clearly ascertained by Hedwig. Mr. WOODWARD. *Leaves* small, the under side firmly fixed to the ground, adhering at the base to each other, deeply divided, POLLICH. whitish green, thick, slippery, very smooth, broadish, furrowed on the upper side, frequently forked; segments blunt. WEBER. Growing in a circular form. *Leaves* thick, issuing from a centre, often cloven. Roots fine black fibres from the under surface of the plant which floats on the water. RAY. *hist.* I have never seen it on the water, but in roads and wet cornfields both in spring and autumn. DILL.

Sandy moist heaths. [In the same situations, and usually growing with Targionia *Sphærocarpos*, and at the same time. Mr. WOODWARD. In clover stubbles near Bungay, Suffolk, frequent. Mr. STONE.] A. Oct.—April.

R. Leaves forked; strap-thread-shaped. flu'itans.

Vaill. 19. 3–*Dill.* 74. 47–*Mich.* 4. 6–*E. bot.* 251–*Pet. mus.* 2. 253–*Fl. dan.* 275.

Not having myself seen its fructifications, it is still a doubt whether it really belongs to this genus. LINN. Floating in stagnant water; brown green in spring, pure green in summer. DILL.

Ditches and sides of pools. P. Jan.—Dec.

fruticulo'sa. R. Leaves upright, compressed, variously branched: branches upright, forked, awl-shaped.

Fl. dan. 898. 3.

Its habit that of Jungermannia *furcata*. Colour verdigris, or greenish blue. Dicks. It produces viviparous germs towards the ends of the branches. The verdigris colour is not constant. I suspect it will be found to be a Jungermannia. Mr. Brown.

On the bottom of the trunks of trees among moss. [At Colington, near Edinburgh. Mr. Brown.]

ANTHO'CEROS. *Capsule* awl-shaped, 2-valved: seeds fixed to the partition or to the valves.

Obs. For more particulars of the fructification see vol. I. p. 367, and 390.

puncta'tus. A. Leaf curled, indented, jagged, dotted.

Schmid. 47–*Dill.* 68. 1–*Mich.* 7. 2–*Fl. dan.* 396.

Caps. and *fruit-stalks* from 1 to 3 inches long, spreading wide in shady places. *Leaves* short, scolloped, jagged, thin, pellucid, deep green. *Fruit-stalks* green, numerous, sheathed at the base. The whole plant turns black when dried in paper. Dill. *Leaves* deep green, crisp, resembling *Jungermannia pinguis*. *Fruit-stalks* simple, issuing out of a lopped sheathing involucrum. *Caps.* at the end of the fruit-stalk; valves 2, bursting. *Seeds* adhering to a columnar receptacle. Mr. Woodward. Dots on the leaves black. Weber.

On heaths in moistish shady places. [Ellingham fen, Bungay, Suffolk, near the direction post. Mr. Strone. Brome, Norfolk, on the borders between the high and boggy ground. Woodw.] P. August—April.

lævis. A. Leaf undivided, indented, smooth. lævis.

Dill. 68. 2.

When recent it is of a rich velvety green colour: the texture most beautiful when held to the light, but without spots, says Mr. Stackhouse, who thinks this and A. punctatus may probably be one and the same species; lævis the plant when barren, punctatus when fruiting, for the spots when highly magnified exhibit clusters of seeds or male flowers; and Dillenius figures 68. 1, and 2, seem to countenance this hypothesis.

First discovered in Britain by Mr. Stackhouse, who found it growing in a shady over-hanging cavity in Fowey Harbour, Cornwall.

A. Leaf with doubly winged clefts; segments strap-shaped. multifidus.

Dill. 68. 4.

Dillenius had not discovered this plant, but figured it from specimens sent by Haller. I am indebted to Mr. Dickson for it. Somewhat resembles the Riccia fluitans, but the segments are pointed, not lopped at the end.

END OF THE THIRD VOLUME.

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